# HYGEIA

## A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

*Published by the American Medical Association*

*The Municipal Pier, Chicago, Headquarters of the Annual Session of the American Medical Association, June, 1924*

Health News Health Views

*June, 1924* *25 Cents*

# *See Your Physician Before It's Too Late*

Trying to fight it out is a dangerous thing. Most people hate to give up, and when they feel "a bit below par" pay little attention to it, or, when some danger signal is given, think little about it until suddenly they get a warning they cannot disregard.

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### The July issue:

*"What People Want to Know About Their Health" is the subject of an interesting article by* DR. LYDIA ALLEN DEVILBISS. *The article is gleaned from 5,000 questions that were asked Dr. DeVilbiss while on a chautauqua lecture platform.*

LYDIA J. ROBERTS, *author of the charming health play that appeared in the January issue of* HYGEIA, *has written a helpful article on the dangers of giving children too much candy to eat. The material for the most of this article was gathered from experience with one of her nutrition classes at the University of Chicago.*

*Those who have always thought that adopting children was a risky business will be glad to find out from* C. V. WILLIAMS, *superintendent of the Illinois Children's Home and Aid Society, Chicago, in his article "Adopted Children," that there is now no danger. "It is up to the persons who are thinking of adopting a child to find out the history of that child so as to be able to protect themselves, and incidentally the child."*

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*Courtesy Farm and Garden Magazine*

# The High Cost of Growing

MARY SWARTZ ROSE

OF COURSE everybody knows how Peter Pan slipped into the home of the Darling family through the window and persuaded Wendy and the other children to fly away with him to the Neverland. But how many recall the crisis in the Darling family which decided for all time whether or not there would be any story of Peter and Wendy?

"For a week or two after Wendy came it was doubtful whether they would be able to keep her, as she was another mouth to feed. Mr. Darling was frightfully proud of her, but he was very honorable, and he sat on the edge of Mrs. Darling's bed, holding her hand and calculating expenses, while she looked at him imploringly. She wanted to risk it, come what might, but that was not his way; his way was with a pencil and a piece of paper. . . . 'Did I say nine nine seven? Yes, I said nine nine seven; the question is, can we try it for a year on nine nine seven?' . . . At last Wendy just got through, with mumps reduced to twelve six and the two kinds of measles treated as one. There was the same excitement over John, and Michael had even a narrower squeak."

Had prudent and methodical Mr. Darling looked ahead, past measles and mumps, to growing-up time, could that honorable gentleman have risked it, even for the sake of the lady whose mouth was full of thimbles? Imagine him setting down on his paper something like this:

COST OF FEEDING THREE DARLING CHILDREN

| | *Wendy* | | *John or Michael* | |
|---|---|---|---|---|
| Age | Food for a day * | Cost for a year | Food for a day | Cost for a year |
| 5 years | 1,400 | $100 | 1,500 | $110 |
| 10 years | 1,900 | 130 | 2,300 | 170 |
| 15 years | 2,800 | 200 | 3,500 | 250 |

* Measured by calories

Wendy might have gone through, as the least expensive proposition, but would John and Michael, even by a narrow squeak?

### *Eats 1½ Times His Weight Monthly*

Stefansson, the explorer, solved one of the difficult problems of his expeditions by learning to travel light and live off the land. What if he had had to feed John, long and lank and hollow to the toes, who at the age of 14 was consuming half again as much as his own weight of food in a month. His monthly intake was:

20 loaves of bread
6 pounds of breakfast cereals
2 pounds of flour for muffins, cookies, gingerbread, etc.
30 quarts of milk
4 pounds of butter (or some kind of fat)
5 or 6 pounds of sugar
1 peck of potatoes
1 peck or more of other vegetables
2 dozen apples
2 dozen oranges
2 dozen bananas
1 pound of dried fruit
2 or 3 dozen eggs
10 pounds of meat, cheese, etc.

Mr. Darling's calculations should take some such form as this:

| | |
|---|---|
| Bread, cereals and flour | 28,000 calories |
| Sugar (including all candies) | 10,000 calories |
| Butter (or other fat) | 15,000 calories |
| Milk | 20,000 calories |
| Vegetables (assorted) | 10,000 calories |
| Fruits (assorted) | 8,000 calories |
| Eggs, meat and cheese | 9,000 calories |
| Total for one month | 100,000 calories |

We can imagine him saying, "My, my! I don't consume more than three-fourths as much as that myself and I am a full grown man. What a steam engine that boy is!"

And Mrs. Darling: "Yes, I stoked in two baked potatoes, six egg sandwiches, a pint of milk, an orange, a banana and a huge piece of gingerbread for luncheon and by three o'clock he wanted another meal! Then I heard him say to one of his friends, in a most disgusted tone, 'Mother takes a salad and a cup of tea and *calls that lunch.*' How any one can survive on two or even three meals a day is a mystery to him."

"Ridiculous, ridiculous, for any one to eat so much! He must learn not to be so greedy," says Father.

"You've no idea how hungry he is," replies Mother, "and we must try to get some flesh on his bones. I saw a report of a study made in a boys' school which showed that the boys ate between four and five thousand calories per day; that means from 120,000 to 150,000 calories per month, half again as much as John is consuming now. Boys of his age are adding to their weight more pounds per year than at any previous age since babyhood. Do not begrudge him his food nor make fun of his huge appetite. It is his right to have enough to make him a strong, healthy man."

"But how can he hold it all? I get along with a sandwich, an apple and a glass of milk for my luncheon."

"It is my duty to arrange his meals so that they will furnish enough nourishment without overtaxing his digestive apparatus. He will eat almost anything and all he can get. I must see to it that his meals meet his real needs in the best possible way."

"What does that mean"?

### *Mother Gives Him Concentrated Foods*

"Oh, I give him bread made with milk instead of water, and let him spread plenty of butter on it. Often I make him cream soups of milk and some vegetable put through a sieve, instead of thin broths with practically no nourishment. Then I make a specialty of puddings. You have no idea how many calories you can tuck into them, once you give your mind to it. I'm an expert on poor man's pudding stuck full of raisins, and chocolate cornstarch blanc mange —it just ripples with calories, and yet it doesn't tax his stomach too much.

"Then there are dates and figs, peanuts and almonds to fill in the chinks," continued Mother Darling, gaining momentum. "Just think, one plain fig yields 100 calories! Four of them stewed make only a saucerful. Nice crisp peanuts with brown bread and butter go excellently with the figs, and only need a pint of milk to make a splendid luncheon or supper. Date graham muffins are another of my specialties, and of course he never wastes space on a beverage thinner than milk or cocoa at the table. I know the secrets of dried milk, too, and can tuck it into many unsuspected places."

And the lovely lady with the sweet mocking mouth, who drew pictures of babies when she should have been "totting up her household accounts," looked as if concealing calories was as much fun as any game which the Darlings had ever played.

"Thirty-five hundred calories a day means nearly 1,200 calories at a meal, doesn't it?"

"Yes, either that, or four meals a day. I think it is better to have a plain lunch of fruit or crackers and milk in the afternoon than to have too heavy a supper and court bad dreams. John and Michael have both learned in school how many calories they should have in a meal, and we often make it a game to discover where I have hidden extra ones."

"Why, if they need so many calories, do you use so much milk and fruit and vegetables? They are too watery to have many calories."

### *Milk Is Indispensable*

"There are some foods you have to have, no matter what they cost, in order to make a perfect diet. Milk is one of these; it is absolutely indispensable, and we'll economize on everything else in order to give each of our children a quart of milk a day until they are fully grown. It is the best kind of 'growth insurance,' and in the long run is a good investment because it makes the other foods do their part better, too."

"And the fruit and vegetables? Lots of folks have grown up without those."

"But lots of folks have not grown up as well as we want our children to grow. I have just heard about two colonies of animals that were treated alike in every respect except that one colony had a double allowance of a certain food substance found in green vegetables, with the result that the average length of life in the colony with the greater amount was twice as great as in the colony less liberally supplied. I should not feel that I was doing my duty by my children if I did not see to it that each of them had one kind of vegetable, besides potatoes, in the diet every day, and that green vegetables were held in high regard by them because of their great value in building the body and keeping it in health."

"It doesn't seem to me that you allow them much sugar, and that is one of our cheapest foods, to say nothing of its popularity."

"I have studied very carefully the proportion of the total calories which should come from different foods in order to insure a properly assorted diet. If you will look at John's calories for a month you will see that about one fifth of them come from milk, and nearly as many from fruits and vegetables. A certain amount of fat is necessary to make the diet sufficiently concentrated, so I allow between one fifth and one sixth for fat.

"Sugar is good for flavor, but it has none of the important materials for building the body and keeping it in order such as are found in milk and vegetables and fruits, so I limit this to a small amount lest more important foods do not receive their due attention.

"The grains are the most important source of cheap calories, and yet these, too, must not be used to the exclusion of the milk and vegetables. These and sugar should not constitute more than two fifths of the total calories unless one wishes to limit oneself to the use of the whole grain rather than more highly milled products, and even then one cannot depend on cereals to take the place of milk, vegetables and fruit."

"This sounds pretty complicated. You should let me do the calculating, my dear."

*Easier to Figure Calories than Income Tax*

"Oh, it is not much trouble. I just take an inventory once in awhile, to see how things are running. I weigh all the food we use for a week and then with a book of food values I can quickly find out how many calories come from each type of food. It isn't half as bad as making out an income tax report."

"I had no idea you were going to all this trouble; and I do not know that I like the idea of eating by rule. What is the use of having an appetite to please if you have to say, 'Appetite, I cannot suit you; I have to eat what I have figured out to be right for me.' Doesn't it sound a bit priggish?"

"This is what an interesting book of Michael's, called 'Food and Life' says: 'It is not enough to provide for Body Self the right amount of fuel foods and life foods. We must speak a good word for them to Body Self, welcoming them cordially as they come to us. Only a person who likes almost everything can safely let himself eat only what he likes.'"

You will remember the trick Father Darling played with his medicine, tormenting the dog nurse with it instead of taking it himself, and so you will not be suprised that he suddenly changed the subject.

"What is the matter with Wendy? A few years ago she was as ravenous as the boys, and now I hear her say over and over, 'Oh Mother, I just *can't* eat any breakfast.'"

"Wendy is fifteen years old, and past the time of most rapid growth. She has had a fitful appetite for some time, but we shall tide her over that. The less she wants to eat, the more I make her rest and sleep. She needs freedom from nervous excitement, with plenty of outdoor life, to lay the foundation of vigorous womanhood."

"I think she is just starving herself so she won't get fat."

"Well, we do not want her to be *too* fat. If she avoids the candy shop and soda fountain for that reason, it will be a relief. I found some overweight girls actually losing as much as two pounds a week by simply cutting out those things. But, of course, I must see to it that she does not cut down on foods that are essential to good body building. I will not let her go to school without breakfast and I will not let her selfishly make a great deal of labor for somebody else by demanding special foods. But some concessions are not reprehensible.

"Have you noticed her fruit breakfast? It has just as many calories as her cereal-and-milk breakfast and even more of the indispensable food substances."

WENDY'S BREAKFAST

| | |
|---|---|
| One half cup grape juice | 100 calories |
| One large ripe banana | 100 calories |
| One half cup thin cream | 200 calories |
| One thin slice buttered toast | 50 calories |
| One and one half tablespoons milk sugar (dissolved in the grape juice) | 50 calories |
| Total | 500 calories |

"How about luncheon?"

"The school takes care of that, and prevents the girls taking nothing but sweets by making a rule that each girl must take some hot food (cocoa, soup or some prepared dish) or a salad (usually made of fruit) before she may buy a dessert. Salads are popular because the girls judge food mostly by their eyes. They talk about the color rather than how it tastes. A red cherry or a green leaf, a fancy shape or a dab of whipped cream casts the die. A whole school of girls walked out of the dining room without tasting the pudding because it appeared in the big dish in which it was baked. The next day it was turned out as a mold on a fancy plate and they not only ate it but clamored for more!"

### *Wendy's Food Must Look Pretty*

"But all these things add to the cost of the diet."

"Indeed they do, but I consider that a part of the cost of growing up. A girl does not need as many calories as her brother, but the same amount of money can be spent for her with good conscience, using her love of beauty to supplement her weaker urge to eat. I keep her diet liberally supplied with fruit and vegetables, give her an egg and a quart of milk a day, insist on her eating at regular times, and try to arrange for her a wholesome life that will give her a good appetite. She is learning at school that the physical beauty which is one of her greatest concerns comes through health, and she has seen how quickly animals show the effects of unsuitable food in stringy hair and blotched skin. She brought home a very clever little pamphlet the other day—look at it:

HAPPY'S ROUGE FOR THE CHEEKS

No dressing table is complete without our
CREAM KISSED CARROTS

DIRECTIONS

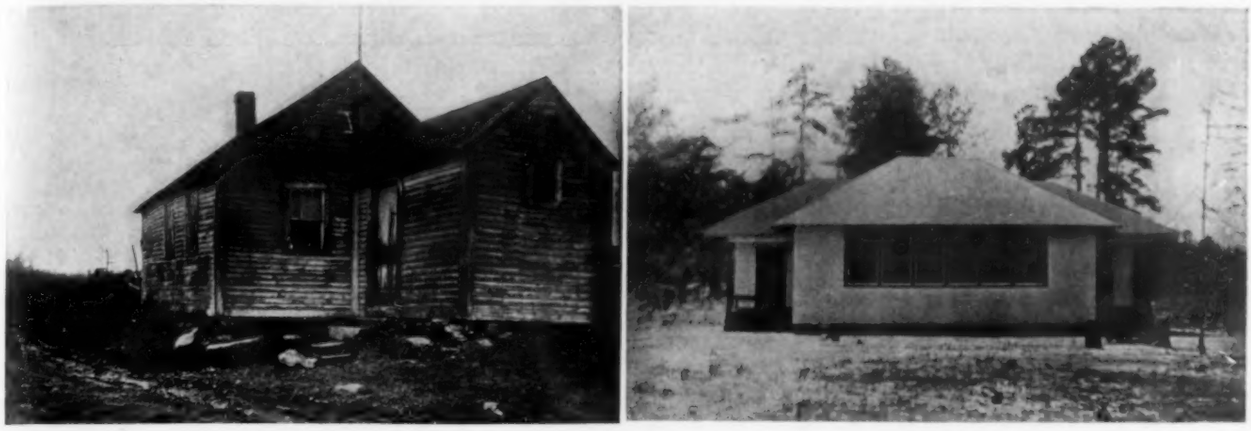
Use Yellow Carrots cooked in White Milk
twice a week for one month.
By mixing these two colors within the body
a permanent blush will appear on each cheek.

"Nobody said, 'Why do I have to eat carrots?' when we had them for dinner the other night, either."

If Mrs. Darling "was too fond of her rubbishy children, she couldn't help it"; she did so want them to have the best chance in life and she knew how much depended on their getting and keeping the best food habits.

And Mr. Darling "had a noble sense of justice and a lion courage to do what seemed right to him," so he gave up his love for mince pie and waffles with lots of butter and syrup, ate cereal every morning for breakfast and never turned up his nose at any green vegetable. He regretted not living in greater style, but he was secretly glad to see that their sacrifices were not in vain, and that in spite of her romantic mind Mrs. Darling knew how to safeguard through a well-balanced diet the health of their now half-grown children.

*The prize winners in the* HYGEIA *health poster contest, which closes May 31, will be announced in the August issue.*



*A contrast in country schools. Which type predominates in your district?*

# A Country School Teacher Takes Up Sanitation

JULIA STAUFFER

A YOUNG woman known as Louise Smith, recently graduated by the State Normal School, wished to spend a year with her parents, who were farmers in a prosperous rural community. With that idea in mind, she applied for and secured a position as teacher of the district school three miles from her home.

School opened on the first of September and forty-six pupils ranging in age from five to sixteen were enrolled. Most of the children were from fairly well-to-do families and apparently were healthy, normal youngsters.

The first day the children were dismissed an hour early and Miss Smith, having finished a great deal of the clerical work necessary during the opening days of a new school year, began to inspect the building.

It consisted of one large room with two small vestibule entrances. The seats faced the front of the room and were of various sizes; however, there were not enough small ones, with seats the proper distance from the floor and desks in correct relation to the seats. Most of the larger seats had the same ill adjustments.

### *Everything Was Wrong with Building*

The rear wall and the two side walls boasted two and three windows, respectively, while in the front there was one. Such lighting! The building faced the east, so that the morning sun streamed directly into the childrens' faces; in the afternoon the teacher must take the same punishment. Old green window shades reached scarcely more than half way down the panes, and disreputable white sash curtains hung dejectedly from the sagging strings that served as curtain rods.

The walls were painted a dingy blue and were covered with various stains, fly specks and dirt. The floor had been mopped when the schoolhouse received its annual summer cleaning, but no one had dreamed of oiling it. The windows were loose and two panes of glass were out. In the center of the room stood a large wood stove; a poorly supported pipe ran half the length of the room to the chimney in the west wall. Blackboards were made of painted wood, badly cracked, and the chalk furnished was the cheapest and dustiest on the market.

At one entrance was a common pail for drinking water, a wash basin and a crash towel. A broken mirror hung by the window; hooks for the children's wraps were scattered about the wall space.

### *Hogs Wallowed Next to Schoolhouse*

All of these things presented a most discouraging outlook, but exterior conditions were as bad or worse. Across the front of the building was a cement porch. A high board fence was fastened to the southeast corner of the schoolhouse, extended about four feet perpendicular to it and then ran east until it met the road fence. At the northwest corner was a similar construction extending directly north to the road. Hence there was no playground on the south and west sides of the building. Instead, the farmer who owned the land lived a few rods distant and at the time kept several hogs in this particular lot. Three or four of them were then sunning themselves in the dust close to the schoolhouse.

The playground plot scarcely served its function. From the road to the building the land was up grade, and quite rough. The children played across the road on a vacant lot which

was part of the church property. Directly north and close to the schoolhouse was the woodshed; behind it the outdoor toilet for girls. A few feet back stood the boys' toilet. There was no well on the grounds, so the drinking water had to be carried by volunteers down a dusty road from the nearby farm house.

*Other Schools Little Better Off*

Perhaps this sounds greatly exaggerated, but within a radius of five or six miles there were three other schools that boasted conditions scarcely better.

Miss Smith closed the building and woodhouse, went for her horse, which was kept in the church sheds, and started home. She told her parents what she had found and declared she would do all in her power to remedy the conditions.

The first step was taken the next day by a talk to the students about the danger of the common towel and drinking cup. One of the boys informed her that each had his own. To verify this, Miss Smith asked each pupil to produce his. Just seventeen had cups! How did the other twenty-nine drink during that warm September weather? Borrow, of course. So she told them about the paper cups and towels that could be had, and suggested that a covered water container with a faucet should replace the open pail.

But until such could be obtained, she begged the boys and girls to bring cups and towels of their own, and helped one of the older boys to make a pasteboard cover for the water pail, when it was not in use. A clean towel was to be hung up in the morning and again at noon for those who still would run the risk of using it.

*School Was Good Enough for Moderator*

That night after school, she called on the moderator and asked that the money for cups, towels and a drinking fountain be voted by the board. She also mentioned the broken window panes and asked for mosquito netting to tack over four windows so that fresh air could be had without so many flies.

"Well, Miss Smith," he said, "perhaps some of these new fangled ideas are all right, but I went to school in that same building and what was good enough for me is good enough for my kids. As to the window panes—it is warm yet—but I'll get them fixed in a few days."

The few days ran into five weeks and, in the meantime, cardboard and old rags had to be used to keep out the wind and rain. In regard to the condition of the building, the moderator had seemed to forget that it had depreciated considerably during the fifteen years since he had been a pupil. He should have been progressive enough to want his children to be surrounded by better conditions than he had endured, but belonged to that type of farmer who lets his family live in a ramshackle house and has a fine barn for his cows, sheep and horses.

Miss Smith was disappointed, but did not give up. On her way home she stopped to talk with a second member of the board and presented the case to him. He agreed with her. He had four children in school and said he wanted them to have the best that could be afforded.

"But, you know," he said, "the other members are very conservative, and I can't do much alone."

*Flies Swarmed About Lunches*

Well does the writer remember the day in the second week of school when she called at noon at this schoolhouse. Several children were eating outside, but many were in the building. The windows were wide open because it was still very warm. Flies were swarming around the lunch baskets and the bits of food on the desks. Just outside I could hear the contented grunts of three black hogs as they wallowed in the mud of a recent rain. Miss Smith was greatly discouraged and did not conceal the fact.

*With eyes blinded by the light, and with feet dangling in midair, the children in the country school on the left are facing handicaps to health as well as to education. Note the transformation on the right—no cross lighting and adjustable desks.*

"What can I do?" she said. "It is a colossal task. I can't get a penny out of the board, and I cannot afford to buy all that is needed. I have been giving daily health talks to the children, and gradually working up their interest in sanitary surroundings through posters and stories in language and physiology classes. I think that quite soon I shall suggest a 'social' of some kind to raise money for the necessary things."

About the middle of October there appeared an announcement in the local paper of a box social to be held in the home of Mr. Brown. A program would be furnished by the pupils and the money raised would be used for some improvements for the school building. The affair was a success and $48 was raised. A fish pond and candy booth were added features that helped to swell the proceeds.

### *Transformation Was Begun*

In November the writer again called at the school. What a change! There were paper towels and cups, a water cooler, a new mirror, several boxes of dustless chalk, clean white sash curtains at the windows and mosquito netting over the outside of four of them. The windows in front were boarded so that no light could come from that direction. New long tan shades, which could be adjusted from the top or bottom, were in place at the other windows.

"I finally have persuaded the board to buy the shades and they have promised to oil the floor during the Thanksgiving recess," Miss Smith declared.

"A week ago I held a debate here between the seventh and eighth grade English classes and the children invited their parents. After the debate I talked to them a few minutes, explaining the evil effect of this lighting on the children's eyes and told them how badly the dust rose from the unoiled floor. I have kept a few dollars to buy more towels and cups, but we plan to give a bazaar and bake sale in Evansville before Christmas to obtain more money for that purpose. I shall induce the parents to come here again by means of another debate and an exhibit of the work done by the children. Then I want to discuss conditions outside the building. The children so badly need more room for outdoor exercise and some playground equipment."

Of course the building really needed to be remodeled with the windows all on one side, so that the light would come from the south or west and fall over the left shoulders of the pupils.

### *Teacher Examined Children's Eyes*

The light had been so poor and the cross lights so trying that the teacher was certain some of the pupils' eyes needed attention, especially the eyes of the older ones who had been studying by it for five or six years. So she secured a simple eye test and examined all the pupils. Several needed glasses, and be it said to the credit of the parents that all but one obtained proper treatment for their children.

Throughout the year Miss Smith kept in close touch with the parents and other residents of the district. In April she accepted a position in a town in another part of the state, but her efforts had evidently not been in vain.

### *School Was Brought Up to Standard*

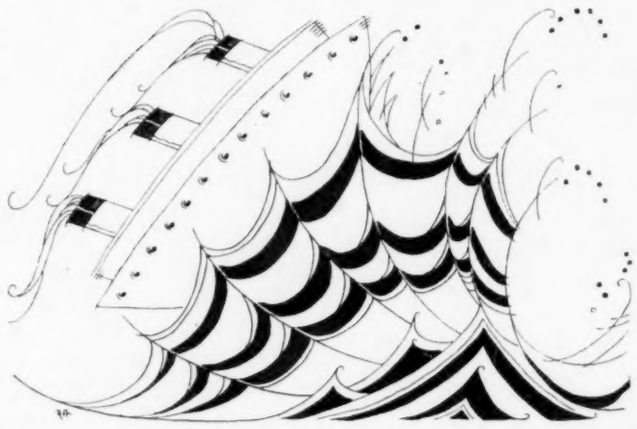
At the election that spring the member of the board who said, "It was good enough for me," was replaced by Mr. Brown. He pushed the idea of improvement and when school opened the next fall it was declared a standard school. The lighting had been remedied, a furnace installed, indoor sanitary toilets built where the old entrance halls had been and a main entrance placed in the center. New adjustable desk chairs had been bought and slate blackboards put in.

Three rods of land south and west of the building was purchased so no more pigs could sleep peacefully in the shade of the schoolhouse, and the pupils had adequate playground room without running across the road on other property. Already the children were talking about a little play they were going to give to raise some money for playground equipment.

What a blessing are teachers like Miss Smith! Most parents have a vital interest in their children and all that is usually needed in such cases is some one to open their eyes and point the way.

# "Sailing, Sailing—Over the Deep Blue Sea"

GLOVER H. COPHER



THE great increase of travel to foreign countries in the past few years has brought thousands of travelers face to face for their first time with that bugbear of the ocean, seasickness. It is contemplated with trepidation by many seasoned travelers as well as by those passengers making their first transoceanic voyage. Some persons are immune to the disease and others are never able to make a voyage without discomfort. Some passengers are ill only during the first few days of the voyage until they acquire their "sea-legs"; others only during stormy weather; a few are ill during the entire trip. Immunity to the disease is not always lasting.

Accounts of seasickness date far back in history. A description of the disease was made by Hippocrates, who wrote: "Sailing on the sea proves that motion disorders the body." Homer wrote of the disease. Horace and Virgil refer to it. There have been comparatively few articles written on the subject in medical literature since these early ones.

### *Fear and Imagination Play Part*

Since we are without definite knowledge of the specific cause of seasickness, it is natural that there should be different theories concerning the cause of the disease and numerous remedies for it. One of the many theories for the cause of seasickness is that it is due to psychic phenomena of fear and imagination. It is known that fear may produce a depression of the higher brain centers which may be expressed externally by many of the symptoms characteristic of seasickness.

That fear and imagination may not be all that is concerned is proved by the fact that infants and young children who do not know fear become seasick. It is true that neurotic individuals are very susceptible and that women are more susceptible to the illness than men. Furthermore animals, which are not regarded as liable to psychic disturbances from a sea voyage, give evidence of seasickness at times. It has been said that the English race horse, Papyrus, had signs and symptoms of seasickness during his trans-Atlantic voyage.

Some observers claim a relationship between visual disturbances and seasickness. We are aware of our position in space, carry out bodily movements and maintain our equilibrium by the coordination in the brain of stimuli or impulses originating in the eyes, the inner ears, the muscles, tendons and the joints.

If we touch a hot object with a finger, the sensation of heat is transmitted along the nerve from the finger to the brain. In the brain the stimulation is registered as pain. The sensation is relayed to that portion of the brain which controls the muscles of the arm and hand. Almost instantly as a result of coordination of sensation and movement, the muscles are contracted, withdrawing the finger from further danger. Coordination is gradually acquired after birth. As we grow older, coordination of the body, such as in walking, becomes largely automatic. Striking examples of automatic coordination are exhibited by the tight rope walker or by the structural steel worker who walks narrow steel girders at dizzy heights. Such coordination of mind and body should be highly developed in aviators.

Partial loss of coordination is thought to be brought about by visual disturbances due to the inability of the person to focus his eyes on a fixed point because of the motion of the ship and the lack of relationship of familiar objects on a changing sea and horizon. This loss of orientation from visual disturbances is said to cause vertigo, or dizziness, with its resulting illness. This theory does not explain all the factors, for blind people become seasick and passengers confined to darkened staterooms with closed eyes may be just as ill as others under different circumstances.

### *Inner Ear Fluid Is Disturbed*

Probably greater factors in loss of orientation than stimuli arising from the eyes are stimuli arising from the inner ears. The semicircular canals composing part of the inner ears are very small, three in number, and are placed in the head behind each ear drum. They are unequal in length, individually describe almost a circle, lie in three different planes and the canals are

joined together to form a common chamber. Inside a portion of each canal is a fluid called the endolymph. Normally the oscillation of the endolymph in the canals varies with the position and motion of the head as the bubble in a carpenter's level corresponds with changes of position of the instrument. These variations of the endolymph send different impulses to the brain which give us our sense of motion, position in space and equilibrium.

In our daily lives on land the brain is constantly, consciously or unconsciously, receiving more or less similar stimulations from the semicircular canals. When these canals are disturbed by unusual motions, injury or disease, the individual is dizzy, cannot stand alone, is nauseated and vomits.

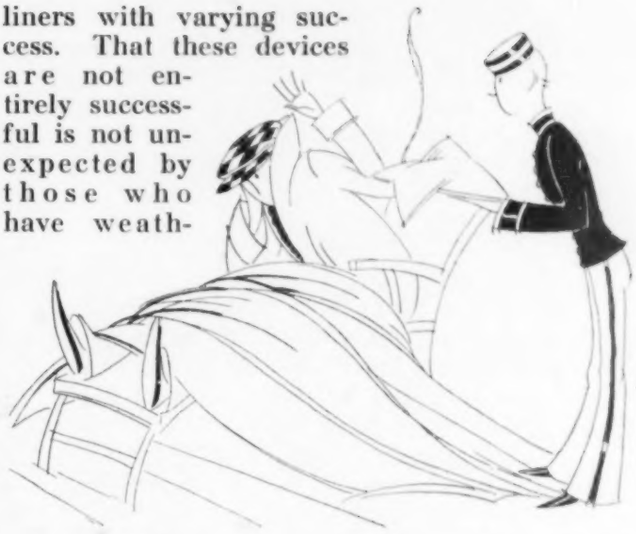
Rapid and unaccustomed changes at irregular intervals as from the motion of a ship produce an unusual circulation of the endolymph in the semicircular canals which, in turn, causes unusual stimulations to pass to the brain, resulting in discomfort and illness. It may be demonstrated that motion will give this effect by whirling an individual rapidly in a revolving chair. These same sensations are experienced by some people when riding in steam or electric cars, in elevators, aircraft or other mobile machines. Even the slight pulsation of a ship arising from the pounding of its engines is enough to cause great discomfort to some passengers.

### *Deaf-Mutes Are Never Seasick*

Further evidence that disturbances arising in the inner ear are a great factor in the causation of seasickness is the fact that individuals in whom the inner ear is poorly developed or is diseased are usually not seasick. It is stated that deaf-mutes are never seasick.

Except for some persons who are always sick on board ship even in calm weather, the exciting cause of the sickness is the motion of the ship. The number of the seasick depends largely on the degree of this motion; likewise does the severity of the attack in the individual. Motions given to a ship by the sea are in the longitudinal axis, in the transverse axis and in a combination of the two. Motion occurring about the transverse axis is greatest at the bow and the stern of the ship and is known as the "pitch" of the ship. The motion about the longitudinal axis is known as the "roll" of the ship.

Naturally all motions are exaggerated by a running sea and a buffeting wind. These unusual and unexpected motions result in disturbances in the passenger which are manifested by the usual symptoms of seasickness. The time when the ship begins to sink in a trough between two waves during its pitching and rolling is associated with the unpleasant feeling about the stomach. Many mechanical devices have been tried to limit the motion of liners with varying success. That these devices are not entirely successful is not unexpected by those who have weathered the North Atlantic in winter. In general, there is less motion the greater the number of tons of displacement of water by a ship.



Whatever may be the cause of the disease, and there is probably a combination of factors, the symptoms vary chiefly in degree. Headache is frequent and is often accompanied by other sensations in the head. Loss of appetite, nausea and vomiting are as a rule present. The nausea of most patients is not relieved by vomiting. Constipation usually accompanies the other disturbances; occasionally there may be a diarrhea. There is usually mental prostration and inability to concentrate. The skin is pale, cold and moist; the pulse is weak and the urine is diminished in quantity.

The patient may have the sensation of impending death. This sensation has given rise to the often quoted statement that the patient was afraid at first that he was going to die but shortly was afraid that he wouldn't die.

### *Remedies Numerous, Cures Few*

As has been intimated, remedies are numerous but cures are few. Each experienced ship surgeon has his own tried methods which he thinks excel. Nevertheless the symptoms may be greatly ameliorated by simple remedies.

Much may be accomplished by preparation of mind and body before sailing. Passengers should not be fatigued when coming aboard ship and should have subsisted on a plain diet for a day or two previously. It is doubtful if drugs have great value as a preventive measure. The stateroom should be chosen with care. It should be preferably amidship with provision for adequate ventilation. There should be no apprehension about the approaching voyage. Food should be eaten regularly and in moderation. Walks should be taken about the decks. Games on the deck, in the lounges, saloons and gymnasium are helpful in warding off seasickness.

When one is afflicted with the disorder, the treatment naturally depends largely on the

severity of the symptoms. If they are severe, most comfort is found in bed. The ship's surgeon should be consulted and the stewardess or steward notified of the illness. Sedatives, pain-relieving or sleep-producing drugs are usually administered; these may not only relieve the discomfort but also may permit sleep.

*Dry Diet Usually Safest*

Food usually augments nausea and vomiting and should be taken with caution, especially if there has been a cessation of symptoms. Relief from pain of continued vomiting and retching is sometimes afforded by attempting to keep the stomach full of food, even though it is promptly vomited. Abdominal compression by a binder is often helpful. Headache may be relieved by the application of an icebag to the head. An attempt should be made to maintain a normal level of body fluids which are rapidly depleted by persistent vomiting. Constipation should not be permitted.

The slightly affected should remain out of bed most of the day time, preferably walking on the deck or reclining in a steamer chair. In no other condition is the appetite so capricious. Small quantities of easily digested food should be taken. Liquids are generally poorly tolerated in any quantity. Some are best able to retain a dry diet. The mind should be fully occupied by amusements. Cool baths are stimulating and should be indulged in frequently.

Fortunately, seasickness soon abates when the motion of the ship ceases. The sight of land produces remarkable cures. Deaths from the disease *per se* are almost unknown.

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# *Safety for Swimmers*

SWIMMING, under proper conditions, is one of the most healthful of all sports. Through failure to observe certain necessary precautions, however, every year many swimmers' lives are lost.

It is unfortunate that more people do not know and observe the simple rules for swimming in safety. They are based on common sense, and are not hard to remember. Some of the most important of these rules are given in a recent bulletin of the California state board of health as follows:

1. Don't swim immediately after eating. Wait for about two hours.

2. Don't swim while overheated. Wait until you have cooled off. Failure to observe these rules frequently causes cramps.

*Quit Before You Get Tired*

3. Don't swim until you are completely exhausted. Stop before you get "that tired feeling." Fish can swim all day without getting tired, but a human being can not.

4. If you are going to dive into the water, make certain that it is deep enough. Many a perfectly good head has been completely ruined by suddenly crashing on the hard concrete or rocky bottom of a swimming place.

5. Should you be caught in a swift current or undertow, don't thrash your arms and legs about wildly. Let the force of the current bring you to the surface. Keep your head. You will need it.

6. Always have your arms in position ready for taking a stroke. You might step into a hole and need a quick stroke to get you out.

7. Don't go into a swimming pool if you are not well. Communicable diseases, such as typhoid fever, common colds, pink-eye, skin, eye, ear, nose and throat infections are frequently spread in swimming pools by persons who are suffering from such diseases.

8. Insist on using a clean, sterilized swimming suit and towel. Many states require proprietors of public swimming pools to provide clean suits and towels for their patrons. They are also required to furnish clean water, and people who use public swimming pools are required to cooperate in keeping pool waters clean and in observing the simple rules of safety in force at such places.

*Learn How to Revive a Drowning Person*

9. Everyone who swims should know how to revive a drowning person. If you are a swimmer and don't know what to do when a person apparently drowns, learn right now how to apply the Schaefer prone pressure method of resuscitation. If every swimmer knew about this method and were to put it into use immediately, whenever necessary, many lives could be saved each year. The American Red Cross issues bulletins on swimming and life-saving, in which the Schaefer prone pressure method of reviving persons who appear to be drowned is described in complete detail.

If all swimmers will observe these simple rules of safety, they can do much to make swimming a safer sport. There is no form of recreation more healthful. It remains only for those who indulge in swimming to remove its dangers and destroy the fears of many who are too timid to venture near the water.

# How the Good Housewife Takes Care of Milk

A RATTLE of wheels in the alley, hurried feet on the steps, a clink of bottles at the back door—the milk man has arrived.

It is now up to the housewife to protect her family against the contamination of the milk supply that, persumably, has reached her back porch in a sterile and healthful condition.

If she is a good housewife, she does not leave the bottles to bask in the morning sun, or—if it is winter—to freeze in the cold blasts. For she knows that milk left outdoors in summer will warm quickly, sour early and if filth bacteria are present soon become unfit for food. She also remembers that in winter, while milk keeps cold out of doors, it is apt to freeze, expand and force out the cap so that the top portion is exposed to the dust of the streets and to animals.

### *Puts Bottles Directly Against Ice*

Accordingly, the good housewife takes the milk into the house without delay and puts it at once in the icebox, provided she has an icebox; otherwise she keeps it as cool as possible by placing it in the cellar or wrapping the bottle or other container in a damp cloth and setting it in a shaded place where air currents will strike it.

The colder the milk is kept, the longer it remains sweet, so if it is possible milk bottles should be placed directly against the ice. If this is not feasible, the bottles should be put in the compartment directly below the ice chamber, for the air circulating through a refrigerator is coldest immediately after it passes over the ice.

If the milk is not delivered in a bottle, as it should be, it should be placed into a jar or some other covered receptacle. Never should it be put out into a pitcher and allowed to stand uncovered exposed to flies.

Milk readily absorbs tastes and odors, so that it should not be placed in the same compartment of an icebox with onions, strawberries or foods with a decided taste. To prevent the absorption of odors as much as possible, the cap should be kept on the bottle. If the cap is not clean, it should be removed and a tumbler or cup inverted over the mouth of the bottle.

It is most important that the refrigerator be kept clean and sweet-smelling. The drain pipe must be cleaned out regularly and the slime removed. This can be thoroughly done only by the use of brushes, such as can be easily procured.

When the milk is to be used, the first step for the housewife is to wipe off the top and neck of the bottle with a clean cloth. During transportation the milk is exposed to dust, dirt and flies, and handling by the driver, who cannot well keep his hands entirely clean.

### *Does Not Remove Cap with Thumb*

In removing the cap, she must use a sharp instrument or a fork so that the cap is not forced down into the bottle. An extremely bad practice is that of pushing the cap down into the bottle with the thumb.

After emptying the milk, the bottle should be carefully washed and rinsed. Of course, the dairyman or milk distributing plant has mechanical means of cleansing the bottles, but unless they are washed in the home they soon become ill smelling and filmy. To make the bottles look clear, after washing and rinsing in hot water, they can be placed under the cold water tap to remove the cloudiness from the glass. If turned upside down to drain, they should not be allowed to stay long in this position for they need air to keep them sweet smelling.

Thoughtless housekeepers and untrained maids have been known to put milk bottles to all sorts of uses, such as vinegar, gasoline or kerosene containers. This is most unfair, for when the bottle is put back into circulation, it is apt to retain these odors. No one likes to think of using milk out of a bottle which has been used for such purposes.

Milk that has been in the sickroom should not be used by well members of the family, for it becomes very easily infected. Therefore it is considered a good carrier of contagious diseases.

# Some Asthma Can'ts and Don'ts

## Horses, Dogs, Cats and Birds—Causes

HARRY S. BERNTON

THE fact that horses, dogs, cats and fowl are capable of causing attacks of asthma in man is now appreciated by the medical profession. Animals are constantly shedding; that is to say, they give off dead hairs, scales and feathers and these are replaced by a new growth. This process, even though invisible to the naked eye, gives rise to a large amount of microscopic dust and inhalation of the dust produces, in some persons, an attack of asthma.

Curiously enough, some are affected by horse dander, others by dog hair, and still others by cat hair. Many unfortunates are sensitive to more than one variety of these organic dusts. Accordingly, "horse asthma," "dog asthma," and "cat asthma" are terms used to designate the source of organic dust which may poison a susceptible person. Some asthmatics learn by experience the cause of their attacks.

### *Auto Is Salvation to Many*

Extensive use of the automobile, either for business or pleasure, has proved a great boon to "horse asthmatics." Gasoline power has robbed horse power of its terrors. The odor emanating from the docile horse, which in reality is the invisible dander, has spoiled an afternoon drive for many a swain. All raptures have fled before an attack of asthma. Horseback riding has been everything but joy riding for the handicapped. So sensitive are some "horse asthmatics" that they may well serve as guides to hasty inquirers as to the location of the nearest livery stable.

One good woman in our town dreaded the season of open windows, for an attack of asthma invariably interrupted her early morning slumbers to announce the passing of the milk wagon. Another lady, fully aware of her sensitiveness, avoided contact with horses as she avoided sin —with religious care. The purchase of an automobile was hailed as a sign of relief from asthma. During a motor trip, however, she was seized with a severe attack of asthma after having been ferried across a stream to an island; in fact, the distressing symptoms made their first appearance in midstream. On landing, the cause of the unexpected attack was discovered, when "old faithful" of the U. S. Mail swaggered by.

### *Household Pets Start Trouble*

Sensitiveness to emanations from dogs and cats is often unsuspected. Household pets, those objects of admiration and of protection, are not associated in our minds with anything so unpleasant as an attack of asthma. Usually, the asthmatic will change climate and enjoy freedom from symptoms, only to have them reappear on the return home. Full credit is given to the change of locality for the relief, when essentially the absence of household pets has been the chief factor.

One housewife, not without good reason, had an aversion to cats. "Rubbing shoulders" against my lady's dress was evidence of the animal's friendliness, but it never failed to provoke an attack of sneezing and of asthma in the susceptible lady.

A young woman, eager for change, moved to a boarding house next door. The more congenial environment and a less nervous state were held responsible for the abrupt disappearance of her asthma; but the new boarding house, while boasting of many other attractions, owed its chief distinction to the fact that it owned no cat.

### *Feather Pillows Sometimes Cause*

Sensitiveness to duck feathers, goose feathers and chicken feathers is another cause of asthma. The extent to which it is found among asthmatics is surprisingly great. The point of contact between the susceptible individual and the emanations from fowl is, indeed, an intimate one and is commonly the feather pillow. The majority of these victims, sooner or later, make their own diagnosis. To many, a chicken-feather pillow becomes the signal of distress.

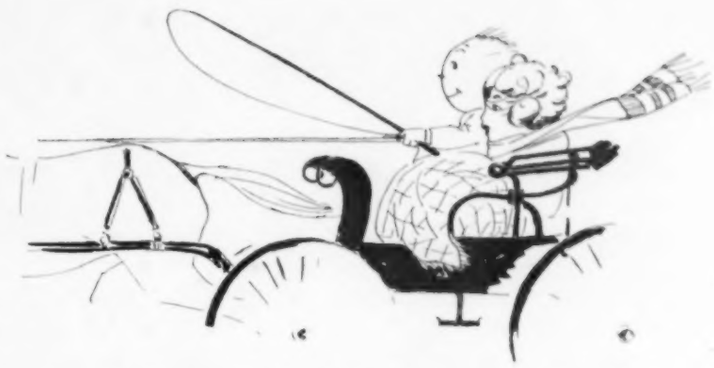
This class of asthmatics complains of nightly attacks which come on just as soon as the "head strikes the pillow." This contact, forceful or otherwise, emits a microscopic cloud of organic dust which is readily inhaled. Irritation of mucous membranes of the nose, throat and windpipe inevitably results in a paroxysm of asthma.

A visit to the chicken coop or to the bird house in the zoological garden gives rise to a feeling

of tightness in the chest and a choking sensation. This is indeed a warning to a "feather asthmatic" that fowl are intended for internal use only.

One young man, at work in a neighboring city, returned home for week ends. Nocturnal attacks of asthma deprived him of the joy of homecoming, until he was advised to discard the family heirloom, chicken-feather pillows.

Sensitiveness to feathers may manifest itself early in life and may become an important factor in the asthma of children. The presence of a parrot in the household of one youthful asthmatic explained the occurrence of distressing attacks. The sudden disappearance of the parrot, soon after the diagnosis was made, likewise explained the sudden cure of the asthmatic condition.



### *Can't Wear Silk Stockings*

Peasants from southern European countries substitute goat hair for feathers in stuffing pillows. Accordingly, a sensitiveness to goat hair is acquired by susceptible individuals. For the same hitherto unexplained reason, there are asthmatics who are sensitive to rabbit hair and to the dust of fur-bearing animals. Thus a fur neckpiece, worn by a young woman, not only caused eczema of the parts with which it came in contact, but also severe paroxysms of asthma. The approach of spring brought relief from further discomfort.

There seems to be no end to the curious findings which are encountered. Even the industrious silkworm has signaled a victim. Recently, there was recorded the case of a woman who developed asthma and hives whenever she wore silk underwear or silk stockings. In this silken age for women, deprivation of fashion is a hardship equal to deprivation of health.

In no field of medicine is the definition of disease better exemplified than in this peculiar state of sensitization, so called. Disease, according to the definition, ensues when man is out of harmony with his environment.

The most encouraging aspect of the type of asthma, wherein sensitiveness to animal emanations is the chief factor, is the ready means of diagnosis and treatment.

Determination of the particular dust responsible for the asthma is made by skin testing. A series of small scratches is made with a needle on the skin of the forearm. The scratches are very slight, and to each one a small amount of animal emanation in powdered form is applied. A drop of weak alkali is added to help dissolve the test material.

Within half an hour, a blister, closely resembling those seen in hives, will appear at the site on which the offending substance has been placed. If, for example, the subject is sensitive to horse dander, the solution of horse dander will cause an elevation of the skin, about the size of a quarter. This is known as a positive reaction. All other substances to which the subject is not sensitive will give no skin reaction.

Treatment depends on the nature of the substance or substances which give rise to positive skin reactions. If such can be eliminated from the patient's environment, the cure of asthma is assured. Discarding feather pillows or furs and eliminating household pets have given prompt relief to many asthmatics. If this plan is not feasible, the subject is given a course of injections with an extract of the material to which he is sensitive, as determined by the tests.

Thus two army officers were discovered to be victims of "horse asthma." Fate caused their assignment to a cavalry regiment. A course of treatment enabled them to serve their country during the World War with distinction—and without asthma.

### *What Asthma Is*

Various theories have been advanced in explanation of the strange phenomena described above. Asthma is an affection of the lungs; more especially, it is an affection of the bronchi and bronchioles—the arborlike tubes through which the air passes from the outside to the lung sacs within. Therefore, the term "bronchial asthma" is frequently applied.

A paroxysm of asthma, so distressing to sufferer and family alike, ensues when the bronchioles "shut down." Their caliber becomes reduced and less air than normal is admitted to the lungs. Hence there follows the feeling of suffocation.

Asthmatics cannot lie down during an attack. They must sit up and take hold of the edge of

a chair or table in order to bring the accessory muscles of respiration into play. Every conscious and voluntary effort is made to force air into the lungs.

It is believed by one school of investigators that during a spell of asthma, the caliber of the bronchioles is reduced in size because of the contraction of the muscle fibers within their walls. It is as if an elastic band had tightened around the air pipes, constricted their diameter, and had failed to snap back.

Spasms of muscle bands are more or less a common experience. The green apple tummy ache of childhood is a classical if not historical example. The child becomes acutely aware of his indiscretion when nature attempts, by forcible contraction of the muscle fibers within the intestinal wall, to expel the forbidden fruit.

In like manner, the presence of an irritant in inspired air will cause a contraction of the bronchial muscles and bring on an attack of asthma. The air, however pure it may be from a chemist's standpoint, contains particles of dust of varied origin and description. Dust, on final analysis, consists of finely divided particles of matter derived from living or dead animal and vegetable sources.

*Sensitiveness May Be Inherited*

Happily, many human beings go through life unaffected by the character of the dust, visible or invisible, in their surroundings. A number of people, however, are affected by organic dust. Medically speaking, these people are sensitized to a particular kind of dust. The cause of this sensitiveness is unknown, but it is established that in some cases it is hereditary.

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# *If Baby Sucks His Thumb*

"JUST look, my dear, he is sucking his little thumb! How perfectly sweet!"

What looks perfectly sweet to admiring friends in a three month old infant may look perfectly stupid in a three year old child, and what seems nature's own pacifier for the nervous baby may be the cause of shame and deformity in a growing school child.

Modern mothers are fairly well informed on the evil results of the thumb sucking habit of children. They know that this habit, if persisted in, may be the cause of defective development of the jaw, with resulting facial deformity. But to break their own offspring of the practice of sucking certain favorite and tasty fingers is not a simple task.

Physicians say that if the baby is old enough to suck this thumb, he is old enough to be broken of the habit. At whatever age the child shows signs of developing the tendency, that is the age and the hour for thwarting his desires in that direction. Of course, some children who occasionally find comfort in a thumb never develop a real habit of sucking it.

Most common among the methods of preventing thumb sucking is the practice of painting the thumb or offending finger with some bitter substance such as quassia or quinin. Quassia is made of the bark from a certain ash tree and this is one of its chief uses. However, the mere painting of the finger with ill-tasting preparations is frequently not sufficient to reform the persistent young thumb sucker.

Another measure, which has been found successful by some mothers, is the attachment of a home-made glove or mit to the sleeve of nightgown or pajama. Often determined little finger feeders will even suck through the mit, with diminished enjoyment perhaps but with some sense of comfort. Aluminum mits are procurable and usually accomplish their purpose.

The most effective method, however, and the one that is least irksome to the child is the use of a device that will prevent the child from bending his arm at the elbow. This may be accomplished by the use of a cardboard mailing tube about four inches long and of sufficient size to slip over the arm. Or if a mailing tube is not convenient, heavy cardboard may be wrapped around the elbow and held in place by a bandage. The elbow should be padded with cotton in using either of these methods.

Of course, if a child is not broken of the habit until he is of school age, he often can be shamed out of the practice, but the sad part of letting the habit go on until the child is old enough to exercise his own will power in overcoming it, is that the damage has by that time already been done. The important thing is, then, to begin to break the habit early.

# What Your Dentist Owes You

ANNA REGINALDA BOLAN

NOW and then we still find an old fogy with the degree of "M.D." who has an attachment on his pocket knife with which he opens an abscess or incises the felon on Johnny's thumb. This he does with as little concern for asepsis as though Lord Lister had never lived. He will tell you that a flow of rich creamy pus does no harm; it aids healing.

We also have with us the "D.D.S." who knows little and cares less about the principles of sterilization, and entertains an exquisite indifference for septic surroundings in his operating room. This man, in a burst of confidence, will tell a fellow practitioner that he has had a series of infections following treatments, and that he does not know the cause. He, of course, does not question his own technique; that might involve complications which would lead to the disturbance of colonies of bacteria comfortably harbored in the dark and dusty crevices of his beautiful, plush-lined instrument case. This, being a time-consuming process, would interfere with routine; besides, he could not collect his specified rate per hour for cleaning up, and as no one really knows the difference, what's the use?

### *Inquire into His Methods*

The majority of physicians have accepted and prospered by Lister's discoveries. Result: the marvelous strides that have been made in modern surgery. A very few years ago it was pointed out that infected teeth are the source of many chronic diseases. The advent of this note in dentistry is to be looked on as a landmark of modern professional progress. By its affiliation with medicine, dentistry has been elevated from a mechanical trade to a profession. Dentistry no longer means merely making a beautiful inlay for an anterior tooth of an attractive young woman, or pounding out a comfortable set of dentures for old "Grandma Gummitt"; it means the intelligent handling of the oral cavity in a manner which implies that it is really a part of you.

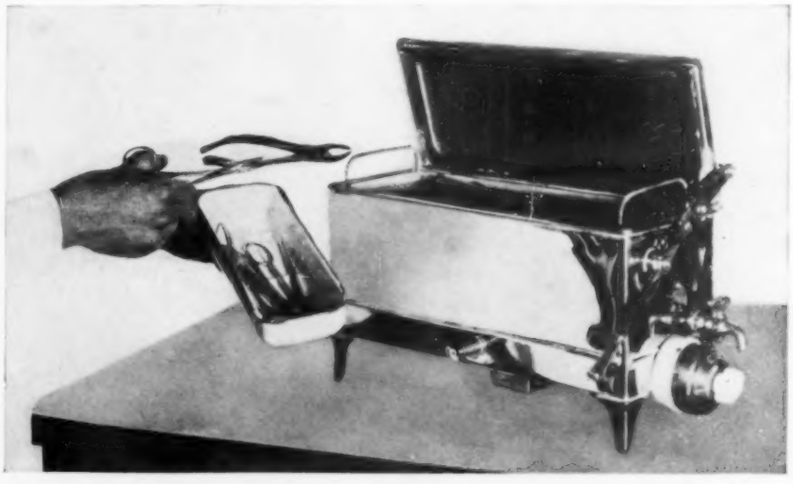
This has necessitated an entire change in the dentist's operating room technique. He must constantly bear in mind the fact that he is dealing with human tissues. As it is his duty to use the proper precautions to prevent infecting his patients, it is your privilege and right to demand that he does so. As you value your health, let no feeling of friendship or unfounded confidence intervene. If your dentist is following the approved technique he will not resent your probing his methods; if not, he is certainly not worthy of your consideration, and it is not safe for you to give him your patronage.

That there is a direct and substantial communication between you and your teeth is not for an instant doubted when you have a jumping toothache; but let there be a painless and blind abscess at a root end, and somewhere in the vagarity of human consciousness, the average individual shuns all responsibility for the activity or virulence of the infection.

### *Are His Instruments Sterile?*

The dentist's work is quite as intimately human as the general surgeon's; then why not hold him to the same rules of cleanliness in his technique? *What your dentist owes you, before you make your first deposit for work to be done, is a demonstration of his method of sterilizing instruments.* This should be some sort of apparatus containing a sufficient amount of water so that instruments can be entirely immersed and boiled.

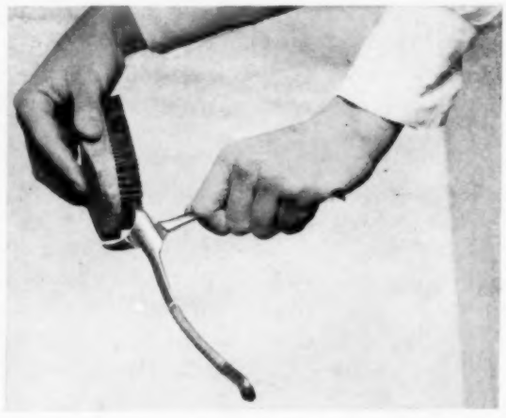
Your dentist may tell you that boiling ruins instruments. It does not! Ask any physician or nurse of your acquaintance about the matter. Particular stress is placed on the subject of boiling instruments because there seems to be a deeply rooted and grossly erroneous idea, prevalent among dentists, that this cannot be done.



*Your dentist owes you scrupulous cleanliness in technique. Here is seen a simple type of electric instrument sterilizer from which hot instruments are being removed.*

The writer is not employed by a surgical supply house to advertise instrument sterilizers; a small basin placed over a bunsen burner will suffice. The object of this article is to throw some light on a way in which a vast multitude of unsuspecting individuals are being exploited by criminally negligent, so-called professional men.

Any new movement that is liable to upset, to the slightest degree, the daily routine of a number of individuals is decried and set down as being unworthy of the consideration of busy people. It is human nature to travel along the lines of least resistance, and the tiny, disease-producing organisms that may be transmitted from unclean dental instruments to your mouth are characterized by this most human propensity. The easiest thing for them to do is to travel along the root canals of your teeth, through which they are able to gain access to the blood supply. Here they may become exceedingly prolific and cause all sorts of trouble, from an abscess to chronic invalidism, or even the death of the individual.



*Instruments should be scrubbed with soap and water and then boiled.*

### *Surgical Technique Means Cleanliness*

There is an occasional argument by poorly informed men that because an area is already infected it is useless to use surgical precautions in the treatment of it; because an abscess exists, or because there is infection around the roots of the tooth, they say it is a waste of time to bother sterilizing the scalpel or hypodermic needle that is about to be used.

"Infection already exists" is their futile argument. Just what would you think of the physician who put your baby, who had whooping cough, into a smallpox or scarlet fever ward, working on the theory that the baby was sick anyway, so how could it matter? There is just as much sense to the argument of the dentist who will not accept the theory and follow the practice of the technique of the general surgeon, as there would be in the performance of the above mentioned and obviously rash deed.

Dental surgical technique is simply high-browish nomenclature for extreme cleanliness. This means clean hands, clean linen, clean equipment and a clean office. It means a fresh napkin on each patient, and one on the instrument bracket for every case. It means scrubbing all used instruments with soap and water, and boiling them for at least ten minutes before using them on another patient.

The patient preceding you in the dental chair may have syphilis, or any other communicable disease. Is it not an idea to be abhorred that perhaps the same unsterilized instruments being used on you were used on this previous patient?

The writer recalls the case of a young married man who developed specific symptoms of this disease. The initial lesion was discovered in the area of a recently filled tooth. This patient now has before him years of rigid medical treatment, at the end of which no one can say, "You are cured," for one can never tell when this loathsome disease will elicit fresh symptoms. Yet the dentist who innoculated this man considers himself mentally equipped to cope with the serious responsibility of treating the human family.

As long as the public will remain inanely indifferent to the conditions that exist in some dental offices, just so long will tragedies like this occur. When better work is demanded, it will be produced.

# Goiter and Its Effect on the Mind

HEBER J. SEARS

WE ARE curiously and wonderfully made. In our bodies we carry around a great number of glands which preside over the chemistry of the body. If a gland is upset the chemistry of the body is upset, for most of the body processes are chemical processes.

It would seem that in the human economy almost every process is dependent on some other process—every gland on the function of some other gland—and that health, physical and mental, depends on the harmonious, cooperative working of all the glands.

In the front part of the neck is a very important structure called the thyroid gland. It is a structure in which we are all deeply interested because it so frequently gives trouble. It forms almost a letter "H" in the upper part of which rests the "Adam's Apple." You cannot feel this gland unless it is enlarged. When it is enlarged we say its owner has goiter.

If the thyroid gland is absent or inactive in a child the child may be dull, or feebleminded, or even idiotic. If the thyroid gland ceases to function in adult life, physical and mental degeneration rapidly sets in.

### *Called "Gland of Romance"*

The thyroid gland has been called "the gland of romance" because it sometimes acts like a barometer, varying with the tide of affection and other emotions. It is known to be definitely associated with the reproductive function. A woman with goiter, if not treated, may give birth to a mentally defective child.

The thyroid gland is also linked up with the liver, with the digestive processes, and, perhaps, with several other processes. It is associated with a number of other ductless glands known by the general name of endocrine glands. These glands play important rôles in the body economy.

The business of the thyroid gland is to manufacture a substance we now call thyroxin. It would seem that the purpose of thyroxin is to regulate the amount of oxidation in the cells of the body. The purpose of oxygenating the cells is to keep the fires burning. So the thyroid gland regulates the supply of thyroxin, and the thyroxin regulates the supply of oxygen to the tissues.

### *Two Periods of Rapid Growth*

There are two periods in life when body growth is exceedingly rapid; these are the prenatal period and the period of adolescence.

In the nine months preceding birth, the weight increase is nearly a billionfold—from a microscopic cell to seven or eight pounds. After birth the rate of growth decreases gradually until the age of puberty when a second period of rapid growth begins, continuing through the adolescent period on to maturity.

These periods of rapid growth call for increased nourishment and for increased activity on the part of all the glands. If the blood of the mother is deficient in calcium during pregnancy, the child's teeth will be brittle and the bone structure correspondingly poor. In the same manner, if the mother's thyroid gland is deficient in iodine during pregnancy, the child may either be born a cretin or it may develop goiter early in life. In other words, the mother cannot give to her child that which her own system does not contain any more than a builder can put lime, brick or stone into a building unless he has these things with which to build.

If the great significance of this one principle alone could be fully impressed on every mother we should soon be breeding a superior race.

### *Adolescent Period Taxes Thyroid*

Adolescence is the second period of rapid growth. Here again the thyroid gland is taxed to its utmost—especially in girls. Coincident with this special activity due to rapid growth, to the awakening of the emotions or to the bearing of offspring, the thyroid gland increases in volume, but if continuously supplied with a minute quantity of iodine, it faithfully performs its function insuring mental and physical vigor.

The brain is the driving force in man and animals. Whether the brain drives well or poorly depends on at least three glands—these are the liver, the adrenals and the thyroid. If the thyroid gland is absent or inactive, the brain is dull and its owner stupid.

If a child is born without a thyroid gland or with a thyroid gland that fails to function, he is called a cretin. Such an unfortunate individual is dwarfed in body and mind. He presents a toad-like appearance. The skin is dry, the tissues under the skin seem very thick and boggy, the forehead is low, the base of the nose is broad, the mouth half-open and the hair coarse. The whole picture is a revolting sight.

Until within the last half century such cases were considered hopeless. Then a great light dawned. Medical science discovered the cause and, as in many other cases, the cause suggested the remedy. That these otherwise

doomed creatures can be rescued from hopeless idiocy is a triumph of experimental medicine unparalleled in its history.

*More Women than Men Have Goiter*

Overactivity or underactivity of the thyroid gland usually causes it to enlarge and when it is enlarged we say its owner has goiter. This disease is more prevalent among women than among men.

Goiters are of two general kinds—simple and toxic. Unless treated, simple goiter sometimes develops later into toxic goiter. In toxic or poisonous goiter the patient is nervous and irritable. There is muscular tremor, and although the appetite is excessive, there is weakness and great loss in weight.

It is now pretty definitely established that simple goiter is due to an iodine deficiency or a lack of certain chemical elements found mostly in sea water and known in chemistry as halogens. These elements are iodine, chlorine, bromine and fluorine. Of these, iodine seems most important to the thyroid. Absence in the diet, and in the drinking water, of these chemical elements which the ocean yields abundantly causes disturbances in the thyroid and probably in other glands.

Goiter is not a seashore disease. The goiter areas are those far removed from the ocean; that is, they are inland districts. In the United States goiter is most prevalent in the regions of the Great Lakes and the Pacific Northwest.

*Simple Goiter not Hard to Cure*

It is gratifying to be able to state that most of our goiter is simple goiter and the magic word is prevention. One leading authority stakes his reputation on the statement that "simple goiter is the easiest known disease to prevent."

The prevention of simple goiter, in goitrous regions, consists in the giving of a very minute quantity of iodine to the expectant mother all through the period of pregnancy and in carrying out a similar treatment among the young until they reach the age of seventeen or eighteen.

Let no one, however, from what has just been said, undertake self-treatment for goiter by the use of iodine. Iodine in goiter is like a two-edged sword and should be administered only by a competent physician after a careful study in each case, because there is one type of poisonous goiter in which iodine is extremely harmful.

The goiter problem is one of great economic and sociologic importance because it has a bearing on the physical and mental well-being of the race. It is estimated that, in the United States, some $40,000,000 is wasted annually on retarded school children—in reteaching what they have already been taught but have failed to learn. Just how much of this dullness is due to goiter has yet to be determined.

During the past half century all the sciences have had a new birth, but in no line of endeavor have we achieved more brilliant conquests than in the field of preventive medicine. As a result of the achievements in this field the average age at death, in the United States, is now about twice what it was some sixty years ago. Our newer knowledge of goiter and its prevention is an acquisition of the last decade.

While our knowledge of goiter is yet far from perfect, the researches of the past decade have thrown a flood of light on the problem, and the spectacular results already attained form a most brilliant page in the recent annals of preventive medicine.

# *The Medicine Man in Industry*

FRANK LESLIE RECTOR

IT HAS been suggested that the apple given by Eve to Adam was a green one. With no previous knowledge regarding the evil effects of eating green apples Adam fell to, with a right good appetite but with disastrous effects on his digestion.

That he was still suffering from the effects of his green apple lunch when confronted by his Creator, and for this reason sought to lay all the blame on his fair companion, seems a just conclusion. Had that first apple been a ripe one without serious after-effects, there is no telling in what different lines the destinies of the human race might have been directed.

*A corner of a well equipped dispensary conducted for its employees by the American Rolling Mill Company at Middletown, Ohio.*

From the time of Adam, if we accept the biblical narrative literally, or from the beginnings of the human race, man has suffered from the effects of eating green apples and from other equally distressing and disturbing conditions. As knowledge has broadened and new activities have been brought into play, new afflictions of the human body have appeared until libraries are now filled with weighty volumes descriptive of the many ills to which human flesh is heir.

### *Each Nation and Tribe Has Medicine Man*

This increase of knowledge brought with it a spirit of investigation, and before long methods were being developed for combating these aches and pains. These methods took on different aspects, depending on the source from which it was thought the affliction sprang. Those thought to be due to the displeasure of some deity were treated by placating the offended god. Weird incantations, wild contortions, sufferings and sacrifices were indulged in to relieve and cure the afflicted. Vile concoctions were consumed by the patient, his friends and family in an attempt to overcome the evil influence.

The "medicine man," as he came to be called, was the member of the community looked up to as the one able to effect a cure. In one guise or another he is found today in every nation and tribe on the face of the earth. From the most primitive of all the savages in African jungles to the most highly civilized peoples of the present day have come men devoting their lives to the science and art of treating human ills, both physical and mental.

The science of public health as we know it today is a product of the last fifty years. In fact, the last generation has witnessed greater advances in this line than the previous century. Coincident with the advancement of public health knowledge has come a marvelous expansion in the industrial life of the world, particularly in our own country. This industrial growth has brought with it many problems, one of the chief of which has been the care and supervision of workers in factories and workshops.

### *Many Hazards in Modern Industry*

In early days manufacturing was carried on in small units, frequently in the home of the employer. There were few workers, the manufacturing processes were simple and little if any machinery was used. Practically all was hand work. As time went on new inventions called for larger organizations, as they made a larger production possible. Thus more and more workers were brought into close contact with each other and subjected to influences different from those to which they had been accustomed.

As processes became more varied new materials were employed, some of which reacted unfavorably on the health of the workers. Types of machinery used also created hazards heretofore unknown. These hazards to the

health and safety of workers resulted in cases of injury and ill health which were recognized as a legitimate charge against the industry concerned.

*Compensation Laws in Forty-two States*

This responsibility of industry is now recognized in the workmen's compensation laws in force in forty-two states and under the federal government. Only six states (Arkansas, Florida, Mississippi, Missouri, North Carolina, South Carolina) have no such laws at the present time. These laws provide, in general, that a certain percentage of an employee's wage shall be paid him during his incapacity following injury, and in some states during illness due to the occupation; also that such medical, surgical and hospital care as needed to relieve and cure shall be furnished by the employer.

It was the passage of these compensation laws that brought the physician so closely in touch with industrial work, although previous to this time many employers had made provision for medical attention for their workers, and in some cases even for the care of workers' families. Such arrangements usually bore the earmarks of philanthropy or paternalism, but they served their purpose in their time.

At the same time that this form of social legislation was being introduced there was a marked increase in public health activities in general, and a determined effort was made at the education of all classes in matters pertaining to health. The value of good health was emphasized and means were developed for ascertaining the health conditions of a community.

Since industry was charged directly with the payment for injuries and was made responsible for the provision of medical care of those injured, it soon developed that immediate and adequate attention to injuries was not only a humanitarian act but an economically profitable one as well. It brought about recovery of the worker in the shortest possible time, thus reducing the amount of compensation paid and restoring him to productive activity earlier than would otherwise be the case.

*Chief Value Lies in Preventing Disease*

When the physician was first called into industry his work was purely professional. He cared for such illness and injuries as came his way. He did not concern himself with the worker's job, his working environment, the health of his fellow workers, or any of a number of other matters that we now know to be of importance in the daily industrial life of an individual. The physician looked on his industrial work much as he had looked on his private practice. His energies were directed toward the *curing* of the condition *after* it had occurred, with little or no thought of *preventing* the occurrence of the disability.

When the value of preventive work in industry was recognized a marked step in advance was taken. Unfortunately, not all industrial organizations yet appreciate the value of preventive work to the extent that they are willing to apply it in their own plants; but those progressive employers who have backed their convictions by applying recognized preventive measures have attained gratifying results.

Three major benefits are obtained from this work: (1) Decrease in the number and length of absences due to injury or illness; (2) decreased turnover in factory labor; (3) increased earnings for the worker and increased production for the employer. These benefits are brought about in no small measure by the work of the physician in the plant.

*Doctor Must Know Working Conditions*

To render a full measure of service the physician must become familiar with working conditions and plant processes and hazards. He should spend an increasing amount of time in the factory among the workers until he is fully acquainted with the processes and working conditions. If he spends all his time in the dispensary waiting for accident and illness cases to be brought in he will be of limited value to his employing firm.

Frequently, the first contact of the workers with the medical department in the larger plants is at time of employment when they undergo a physical examination. This examination should be complete enough to determine the employee's fitness for the work he is hired to do, but except in unusual cases need not be as complete as if given in the private office of the physician for the purpose of determining the general physical condition.

Few individuals are physically perfect, but many persons have minor defects that in no way interfere with their ability to carry on their usual occupation. It is not believed necessary from the industrial standpoint to give each applicant a thorough examination. Such a procedure is too time-consuming for the results obtained. Of course, those who show defects that will interfere with their work or who give evidence of some disease that may be cured if taken in hand should be given all the attention necessary. Signs of heart or lung disease, or other troublesome conditions should be given careful attention, and such workers should be assigned to tasks in keeping with their physical abilities.

*Three Reasons for Rejecting Applicants*

If workers are carefully selected for the work they are to do, few will be denied employment on account of their physical condition. Experience has shown that the percentage of rejections for physical defects will be negligible in plants that have a well organized placement service

and that offer a varied type of work. In some occupations, such as train service where defects of vision or color sense are important, the rate of rejection will be higher. A study of this matter recently made showed that less than 3 per cent. of a large number examined were denied employment.

The Conference Board of Physicians in Industry, a group of physicians broadly representative of industrial medicine, has formulated the principle that, provided there are vacancies, no one should be denied employment for physical reasons unless when so employed he becomes a danger to himself, to fellow workers or to property.

In practically all industrial organizations there are positions that can be filled satisfactorily by persons suffering from certain defects. One reason that more of such persons are not employed is the fact that several of the workmen's compensation laws hold the last employer responsible for permanent total disability payments if the accident to an already defective employee results in such a degree of disability. For instance, if a person blind in one eye when engaged for work loses the sight in his remaining eye the last employer is charged with payment of compensation for total blindness, although the worker lost the sight of only one eye while in his employ.

### *Physical Examination Before Hiring*

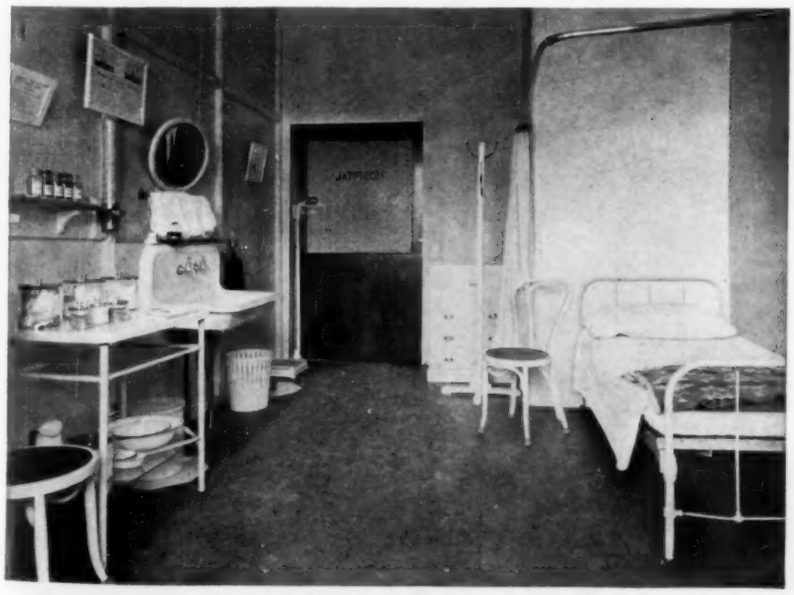
Employees are coming to realize that physical examinations before employment are for the purpose of aiding them in finding the work for which they are best fitted physically, rather than to deny them employment on account of their physical condition. The whole trend of industrial medicine is toward the fitting of the worker to his task so that he will be able to earn more with less effort and at the same time produce more and better finished products.

*At the rear of this view of the Norton Company dispensary at Worcester, Mass., may be seen dressing booths for patients and, behind the doctor's desk, a small room for special examinations.*

In those plants where physical examinations are made for employment, the next logical step in the preventive medicine campaign is to encourage and secure periodic reexaminations of the employed force. In several large plants this is already being done with the executives, foremen and other "key men," and in some cases such facilities are offered to the workers. By this means many disabilities are discovered early and proper corrective measures applied.

In plants where no preemployment physical examinations are made, the physician first comes in contact with the worker when visiting the work place, or when the worker visits the dispensary for treatment. The mental injury is often worse than the physical injury and needs more careful treatment. Under these circumstances a worker when having his injuries dressed can often be put in the right mental attitude by kind and tactful treatment on the part of the physician and his assistants.

In addition to the major functions of the medicine man in industry that have already been discussed, he is often called on for counsel and advice on other matters. As the family doctor is often the confidant of his patients on matters other than those strictly medical, so the medicine man in industry often is consulted in regard to ills of the



*A comfortable bed is a desirable addition to dispensary equipment. Owing to lack of space, the necessary privacy is obtained in this room by the use of curtains. This is one of the dispensaries of the Eastman Kodak Company at Rochester, N. Y.*

family, and many other personal and social questions.

In fact, he is the "family doctor" for the industrial group with which he is associated, and if he is measuring up to his greatest opportunities he will encourage rather than discourage these associations and confidences. The more firmly entrenched he is in the respect of his plant workers, the more readily will they listen to his advice and the farther will his influence spread.

Successful physicians in industry today are interested in and in many cases are directing the activities of general personnel work, such as employment, safety, recreation, housing, education, transportation and community sanitation. The more closely these so-called welfare activities are coordinated and administered by one directing head the more efficient they become in the life of the plant. Some of them could be well conducted by non-medical men, but if a physician has the proper appreciation of the relative values of the various activities and the executive ability to handle the work, he makes an ideal directing head for this type of work.

### *Plant and Private Doctor Should Cooperate*

With such a broad field of action on the part of the medicine man in industry, it is easy to see how his work supplements and aids that of his brother practitioner in private practice. Instead of their work being antagonistic it can well be cooperative. The physician in industry will uncover many conditions in the course of his work that are not the responsibility of the industry, but which need correction by a physician. These should be referred to the private physician and the worker urged to have the necessary treatments before the disability becomes more pronounced. By cooperating with the worker and the family physician in having this work done the plant physician will be rendering a service to all interested parties.

Information obtained by physical examination of prospective employees and workers should remain confidential between the physician and worker, the employer being told only that a worker can or cannot be placed on certain types of work. When workers once realize that their condition is not common plant information, they will all the more willingly cooperate in the work of the medical department.

Good work cannot be done without adequate space and equipment. In no place is this more true than when considering the workshop of the medicine man in industry. He cannot be expected to turn out a good product in cramped quarters any more than a production engineer would be able to do.

Plenty of room and light, adequate ventilation and clean, scrupulously clean, surroundings are the three cardinal virtues of the industrial dispensary. All may be obtained without undue cost. Clean orderly surroundings make a favorable impression on employees.

Equipment for the industrial dispensary should be simple and practical; supplies should be of best quality and sufficiently abundant for all needs. In industrial work as in no other form of medical practice, the physician is often put to it to develop some form of treatment that will enable the worker to carry on his work while recovering from his injury.

The addition of an x-ray to the equipment of an industrial dispensary is a great time and money saver. Its cost will soon be offset by the saving in amounts paid for such work and the time of employees saved in going outside to have such work done. Such equipment need be neither large nor expensive.

How much of a staff will be needed to carry on medical work in industry?

This will depend on the size of the working force, the character of the processes employed and the availability of more extensive and complete hospital facilities. Where hazards of chemicals, fumes and gases are present, closer medical supervision will be needed in smaller plants than in larger groups of workers with less hazardous occupations. Also the sex of workers will influence the personnel.

Some plants with a few hundred workers employed in dangerous processes would need the services of a physician most, if not all, of the time. Practically any plant with 1,000 or more workers could well utilize the major portion of a physician's time in addition to the time of a nurse.

As the plant population increases the medical personnel should increase until in large industrial units of several thousand workers a number of physicians, nurses and clerical assistants will be found. Dentists, oculists and physiotherapists are also found in many of these larger establishments.

### *Should Be Neutral in Disputes*

The successful physician in industry possesses human sympathy, tact and judgment. The high ideal of service to both management and men must be uppermost in his mind. He must ever remember that he occupies a neutral position in any controversy that may arise between employer and employee, dealing with both in the fairest possible manner. He should be kindly and sympathetic, able to win and maintain the respect and confidence alike of workers and management. These attributes belong to other members of the staff as well as to physicians.

An ever widening field is opening for the medicine man in industry and he must prepare himself in order to render this larger service to his fellow men. That he will succeed seems certain from his achievements in the immediate past.

Not one of the 15,000 persons of Southern United States that die each year of malaria need ever be sick with the disease, were proper control measures taken. To the right is seen a photograph of a typical "pot-hole" in a small stream; this "pot-hole" was the breeding place of millions of malaria-carrying mosquitoes, until the ditching, shown in the photograph below, removed the stagnant water. Several Southern railroads, notably the St. Louis Southwestern lines, are doing a great work in malaria control.

# "Chills and Fever"

## *How Several Southern Railroads Are Developing Malaria Control*

H. W. VAN HOVENBERG

ANY sanitary measures that can save $100,000,000 a year are surely worthy of trial. When these same measures will spare the lives of 15,000 citizens during each twelve-month period, the marvel is that steps have not long ago been taken to prevent this enormous human and economic loss.

To be "took down with chills and fever" is the most common complaint in certain sections of our South, and malaria reaps a larger toll below the Mason-Dixon line than does typhoid fever, dysentery, pellagra and tuberculosis combined—the figures are those of the U. S. Public Health Service.

### *No One Need Die of Malaria*

By far the most lamentable aspect of this great loss of life is that malaria is wholly preventable, and not a day's illness nor a single death need be traced to that source, provided proper sanitary control is exercised.

One autumn day in 1916, Mr. Edwin Gould, who is chairman of the board of directors of the St. Louis Southwestern Railway lines, paid a visit to the company's hospital in Texarkana. There, in talking to the superintendent, he learned that one third of all medical relief furnished to railroad workers in that hospital was for the treatment of malaria, or "chills and fever." Six hundred of the company's employees every year were so ill with the disease that they needed hospital treatment. And it was later estimated that four men were treated for malaria at their homes or on the line to every one that received hospital care.

Astounded by these figures, Mr. Gould sought assistance from the U. S. Public Health Service in establishing a plan of malaria control, and thus the railroad's war against malaria began.

The plan was twofold: (1) to improve the health of employees and their families and to increase the efficiency of labor, and (2) to get the cities and towns along the railroad to enter a joint campaign for eradicating the malaria-bearing mosquitoes on the grounds that their prosperity and the output of their lumber mills and industrial plants would increase through such action.

Assisted at the start by the U. S. Public Health Service, the railroad began in 1917 its antimalaria campaign and appointed a sanitary engineer who was to work under the immediate supervision of the president of the road.

### *Used Panama Methods*

The same methods used by our government in Panama were applied: the eradication of mosquito breeding areas in and adjoining cities and towns, the demonstration of the value of effective screening of houses and railroad

*Water reservoirs and stock ponds produce malaria-carrying mosquitoes. Laborers are here shown clearing the banks of grass and weeds to allow top water fish to destroy mosquito wiggletails.*

bunk cars against mosquitoes, and the use of quinin in prophylactic doses.

Results thus far have been most striking. During the first five years of malaria control measures, there was a decrease of 84 per cent. in the number of cases among the railway employees of all classes. The table shows a comparison in the number of cases during certain fixed periods.

*Comparison of Malaria Cases in the St. Louis Southwestern Railway Hospital for Certain Years*

| Class of Employees | Annual Average 1913-1916* | Total for Year 1922 † | Decrease |
|---|---|---|---|
| Section men | 259 | 24 | 91% |
| Extra gang men | 134 | 43 | 68% |
| B & B men | 89 | 10 | 89% |
| Shopmen | 73 | 6 | 92% |
| Trainmen | 27 | 2 | 93% |
| All other employees | 21 | 13 | 38% |
| Total | 602 | 98 | 84% |

* Prior to malaria control.
† After five years of malaria control.

Education of the employees in a knowledge of the cause and prevention of malaria played a most important part in reducing the prevalence of the disease among them. At the close of the year 1922, approximately 75 per cent. of the St. Louis Southwestern system employees, formerly living in towns having a high malaria rate, were afforded protection through mosquito eradication campaigns, screening of their homes with 16 mesh wire, or through quinin prophylaxis.

A survey of a number of railway hospitals in the South in 1918 disclosed the fact that the malaria admission rate to the St. Louis Southwestern Railway Hospital was not greater than for other contiguous roads. It is evident that there is an abundant field for the application of this new sanitary science among the hundreds of thousands of railroad employees in the South.

### *Car Teaches Children Malaria Facts*

Following the establishment of routine malaria control measures in a large number of towns, the St. Louis Southwestern Railway began in 1920 an educational program among the school children along its lines, and for this purpose it maintains a well equipped malaria and sanitary demonstration car.

In 1921 the railroad was instrumental in establishing a county-wide malaria investigation unit in the heart of the East Texas malaria belt.

The U. S. Public Health Service has been the leading spirit in awakening the railroads to the economic possibilities through malaria control. For several years the Central of Georgia Railroad has obtained excellent results under the direction of Assistant Sanitary Engineer H. N. Old.

More recently a malaria survey of the Illinois Central was made by Assistant Sanitary Engineer J. C. Carter and some excellent work was done by this railroad at Carbondale during the year 1922.

Associate Sanitary Engineer A. W. Fuchs has recently completed a malaria survey of the Missouri Pacific Railroad, and an officer of the U. S. Public Health Service has done similar work along the Seaboard Air Line.

### *Must Help Develop Farm Lands*

During the past years there have been many occasions in which railroads in the malarial sections of the South have cooperated extensively with the various state sanitary engineers in drainage, screening and the furnishing of oil supplies for mosquito eradication work.

With the approaching exhaustion of large timber supplies in the South, many railroads will need to develop agricultural lands, if they are to be self-sustaining. With instances on record

*This man is spraying oil on a large "pot hole" in an effort to kill mosquito wiggletails.*

in which the prevalence of malaria has caused an economic loss approaching $12 per acre on farm lands, there is an excellent opportunity for railroads to take up on their own account malaria control measures that will increase the man power and the farm acreage along their lines. This can be done by a judicious mixture of major and minor drainage, combined with malaria control.

*Roads Frequently Create Bad Conditions*

Certainly it is time that the railway and good roads construction and maintenance engineers stopped the creating of conditions that increase malaria rates. By this is meant the man-made borrow pits that do not drain; the culverts placed at too high an elevation; the discharge of waste water into depressions, and the building of reservoirs for railroads or water power purposes without antimalaria precautions.

There is certainly need for a better understanding of the treatment of malaria among the practicing physicians in the South; for doing away with the use of "patent chill tonics"; and for better screening of tenant houses by land owners.

The results of malaria control work on the St. Louis Southwestern Railway lines certainly warrant the attention of all railway managements that have their part to play in the solving of the malaria problem in the South.

The sooner both railroads and cities in these sections recognize fully the need of control measures, the sooner will they reap the prosperity that will be theirs from eliminating a scourge that is absolutely preventable.

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# *Our Diet Finer than Kings' of Old*

RICHARD E. STIFEL

THE humblest twentieth century American enjoys a diet such as King Tut in his full glory never dreamed of, thanks entirely to present-day methods of food preservation. Just why historians have left unsung the scientific triumphs in preserving food is hard to understand, for in these to a large extent lies the secret of our civilization.

Many other things in which we take pride are old. The Egyptians understood the use of metals and developed the arts 4,000 years ago. The Hebrews had knowledge of quarantine and practical laws of public health. Agriculture, herding and manufacturing are not new. The voyages of the Romans to Britain for tin, the indispensable element in bronze, is evidence of early transportation by water. The pyramids are monuments of transportation by land.

But most of our methods of preserving food are new and original, and it is largely these that have made possible the maintenance of the world's population, the tremendous increase in which is the striking and outstanding fact of this day.

*Ancients Roasted and Smoked Meats*

The problem of preserving food has occupied men's minds since the dawn of intelligence. "The slothful man," says the Old Testament, "roasteth not that which he took in hunting." He permitted much of his catch to rot and go to waste. Preservation of meat by roasting and smoking the surface in an open fire was practiced by the ancients, though they did not know that the heat and smoke exercised a sterilizing effect and that the roasted and charred surface effectively kept out putrefactive germs or bacteria.

The preservation of food by spices, vinegar and alcohol was also discovered early. The Egyptians used this knowledge in the preparation of their mummies. In the thirteenth and fourteenth centuries the great demand of the western nations was for spices. Then the European countries were reaching out for spice supplies as they now are for petroleum and coal fields. It was the desire for a short route to the "Spice Islands" that took Columbus on his way across the Atlantic and gained for him the support of Ferdinand and Isabella. Cloves, pepper, cinnamon and allspice were needed for preserving and pickling meat and vegetables, for refrigeration was not then known. Equally important, of course, was salt, but a salted meat diet throughout the winter becomes monotonous; the appetite craves spices.

*Sugar Brought Back from Crusades*

In the sixteenth and seventeenth centuries sugar came into general use in Europe. It was unknown before the Crusades, at which time some was brought from Cyprus. Sugar cane was transplanted to Madeira and thence to the West Indies soon after the discovery of America. In 1544 the refining of sugar was commenced in England, and in 1597 there was a refinery in Dresden.

Sugar proved to be an excellent preservative as well as a nutritious food. It was used for preserving fruits, vegetables and even meats. To a large degree it replaced spices. It has not lost its popularity in this respect today. Sugar

cured hams and preserved fruits in syrup are known to most people. The syrup must be sufficiently sweet to prevent the growth of yeast cells; otherwise fermentation will set in.

The nature of fermentation interested even the ancients and they had some ingenious theories about this process. Was it caused by the air, by lightning, thunder or other elements? It remained for Pasteur in his studies on fermentation finally to solve the riddle by proving that it is due to the action of living cells of yeast. Not only did this discovery greatly advance knowledge of ways and means to preserve food, but it also was the foundation for the great science of bacteriology and preventive medicine.

*Less than a Century of Commercial Canning*

The world is indebted to another Frenchman, Nicholas Appert, for the discovery in 1795 of a method of preserving food by heating and hermetically sealing it. Napoleon gave this man a prize of 12,000 francs, which he used in further researches. A great benefactor of the human race, he died poor and neglected. In 1832 Thomas Kennett secured a patent on the use of tin cans for keeping food. Glass and porcelain had previously been used. This then was the beginning of the gigantic canning industry. In 1825 fruits and vegetables were first canned in this country for commercial use.

The world had now lost interest completely in the "Spice Islands." The winter diet no longer consisted only of salt meat and dried grains and vegetables. The comfort and health of every one were tremendously improved. The modest home could enjoy delicacies all the year that were denied the kings of old.

*Refrigeration Was Next Development*

With the canning industry came the development of refrigeration, the manufacture of artificial ice, the cold storage plant, the refrigerator car, and the home refrigerator. Meats and other perishable foods could now be brought thousands of miles by train or ship. In 1879 the steamer Circassia delivered in London the first cargo of fresh meat from America. The following year the first shipment came from Australia. Tropical lands today are widely exploited for fruits that find a market far distant. In a few generations, says the explorer Stefansson, the treeless Arctic regions will form the grazing ground for great herds of reindeer. Venison will be an important article in the diet of our grandchildren, and it will be delivered to them fresh and delicious by means of modern methods of refrigeration.

Still more recent has been the development of a new method of keeping food edible and wholesome. We have mentioned preservation by smoke, salt, sugar, vinegar and alcohol. We shall not speak of preservation by formaldehyd, benzoic acid and borax for that is not creditable. We have also referred to refrigeration and to sterilization in cans and glass jars. The newest method is called desiccation or dehydration and it means drying.

*Drying Is Latest Method*

Drying food in the sun was practiced by the American Indians and many other peoples. Drying food in a vacuum at a low temperature at which its nutritive qualities are unimpaired is something new. By this method meat, vegetables, and even eggs and milk can be reduced to powder form and kept indefinitely, since organisms that cause food to spoil require two things—warmth and moisture.

Refrigeration denies them the needed warmth. Desiccation, as in malted milk, withholds moisture. Sterilization kills the organisms by heat. Preservation destroys or inhibits their growth by chemical means.

These are the four great methods of keeping food. And who will venture to say what further changes they will bring in the population of this globe. Statisticians already anticipate the day when New York City alone will have a population of 25,000,000. Each person of these millions, through the perfection of methods of preserving and transporting food, will enjoy a diet such as the ancient kings in all their glory never knew.

# Perhaps Grandmother Was Right

JESSE R. GERSTLEY

WHO would have thought that when the dignified senator from the western state cast his vote in favor of war, he was at the same time sentencing little baby Toodot to an attack of a most mysterious and baffling ailment! Baby Toodot's parents did not have the slightest idea of it either, for they were just married and baby Toodot wasn't even to put in an appearance for another two years. But this is just what occurred and here is how it all happened.

Baby Toodot's father had been a manufacturer in a small western town, but due to the war his business grew rapidly and he soon found it expedient to move to the great city. The demands of the war were inexhaustible. His product was just what was needed by the boys in France, and in a short time he found himself no longer a small town merchant, but a wealthy and successful manufacturer. It was just at this time that baby Toodot arrived, the first born of a very happy and newly wealthy young couple.

### *Ultramodern Methods for Baby*

Baby Toodot's troubles started soon after the fourth month. The parents had nothing in their own past life to aid them in bringing up this little one. All they could remember was a simple village, a well in the yard, and a few cows in a vista of green fields. True, grandmother lived there, a woman of a past generation, but in their hearts they were quite satisfied to leave her behind. They had read much of the evils that resulted from grandparents dabbling with the bringing up of children, and baby Toodot was to be a strictly modern baby, brought up according to ultramodern methods and according to the standard of a newly acquired social position.

The family lived in a luxurious apartment made obnoxious by the constant screeching of motor cars and great busses. An elevated road roared nearby. Guests constantly came and went. There were innumerable dinner parties with attending confusion in the home. The demands of this social life necessitated a special nursemaid for the baby. The maid was exceedingly competent, but unfortunately, owing to the constant interference of the parents, could not accomplish all that she wished.

### *Baby Always on Display*

At all times, day and night, baby Toodot was produced to be admired by inquisitive and flattering strangers. Father came home at night tired, nerves quivering from the strenuous day's labor, and turned to little Toodot for relaxation. It was bedtime for the little one but he always had his game first, tossing the child high in the air, catching her in his big arms, and rejoicing to hear her squeal with glee.

Presents were showered on her, presents not adapted to her infant years. The baby was stimulated by colors of every description, by noises of every pitch, by mechanical dolls and jumping jacks and electrically moving playthings. Friends spared no expense to ingratiate themselves with the parents.

About this time baby Toodot began to exhibit vague and rather confusing symptoms. She didn't sleep as well as formerly. Occasionally she would start violently during her sleep or would awake with a sudden sharp cry. Nor did she take her bottle as well as previously. Mother had been required to wean the child soon after birth for new and alluring social demands prevented the more simple occupation, and baby Toodot, now aged eight months, had received little but the bottle. True, the nurse had offered other foods, but the baby had a will of her own and refused, and the mother had repeatedly admonished the nurse, "Don't force her if she doesn't want it. You only make her nervous."

The child took her bottle at times, at times refused it. Often she would refuse part of her milk, vomit a little, and then drop into a nervous sleep, screaming at any unexpected noise or shuddering violently at any jar of her crib. Her bowels were not what they should be. They were as a rule quite constipated and physics

and enemas were resorted to. Above all things her weight became stationary. The velvety, glossy baby skin looked a wee bit wrinkled, lost its elasticity and resembled a bit of soft parchment. The melancholy little face in its spirit resembled an aged man.

### *Cried All Night Long*

Baby Toodot was fairly quiet during the day, but the nights were terrible. All night long she cried and cried. Nurse, thinking she was hungry, offered milk but this was either utterly refused or taken only in part. Then after a few minutes she would cry again as if with colic and refuse to take more.

The parents were at their wit's end. The physician whom they always called for their own ailments had been in any number of times. He was a physician of the old school, one of those good men who believe sincerely that physic constitutes the only treatment necessary for the sick baby. He had not learned the vital importance of controlling the child's weight, nor did he know that the gain or loss of weight is a far better indication of a child's condition than is the condition of the bowel. He was one of those men who never realize that a baby is something more than stomach, intestines and a diaper.

### *Constipation Not Sole Trouble*

At first he prescribed a course of calomel to disinfect the bowel and to overcome the constipation. Under this treatment the constipation cleared up and the stools became softer, but the baby did not seem one bit better nor did she gain in weight. Her nights were just as miserable, and the incessant waving of rattles, beating of drums and ringing of pretty bells failed to interest her as they had in the past. The neighbors began to complain in a mild, embarrassed manner of her continual screaming.

The physician was plainly baffled and in desperation suggested, "This baby is badly spoiled. You have got to train her to go through the night without attention; that's all there is to it. If she cries, let her cry. Don't pick her up. I wouldn't pick her up even for the bottle. Just give it to her while she is lying in bed. If she takes it, all right, if not, all right, but don't humor her. You've got to show her who's the boss."

After about one month of this the family physician admitted himself dissatisfied, said he thought the trouble lay in the baby's feeding and suggested calling in a baby specialist. It happened that in that neighborhood was a young man just graduated by a medical school in which particular emphasis was laid on the subject of infant feeding.

### *Specialist Gives New Feeding Formula*

Dr. Albert was a conscientious young specialist. He examined little Toodot carefully, inquired as to the feeding, asked to see the diaper, and took a specimen of the stool back to his laboratory for microscopic examination. Indeed, he willingly and patiently did everything he had been taught, but his course unfortunately had not stressed the most important of all subjects, "taking of the history," and so his formula for skimmed milk, logically derived from a careful microscopic and chemical examination of the specimen of bowel movement, did not seem to help baby Toodot one bit more than had the family physician's course of calomel.

Fortunately for little Toodot's future health and happiness, who should come at this time to aid in the nursing but grandmother herself? She came fresh from the clear air and quiet green of the country to add her services to those of the many others who were trying to help baby Toodot get well. For a few days she said nothing, but just observed. She was taking the history. Then all of a sudden she overwhelmed the startled parents by suddenly saying, "There's nothing wrong with that baby; the fault is with you two."

"Why what do you mean?"

### *Grandma Does Some Diagnosing*

"What do you expect of a poor little thing that needs and wants only rest, food and quiet, but instead is put on exhibition here day after day, tossed around by her father, overdressed by her mother, stimulated and irritated by every combination of color and noise and device such as only a cannibal could devise! No wonder she doesn't want to eat and cries and frets all the time. Why, she has real nervous prostration! I'm going to take care of her for a time."

So grandmother preempted all authority and what she did scandalized the two learned doctors beyond words.

First she dressed the child in simple, comfortable clothing. She absolutely refused to let one single visitor into the baby's room. She stopped all medication. All day long she kept the child out in the open where the gentle soft wind and the limitless blue of the sky worked for quiet and relaxation. She did away with the restrictions of diet and at regular intervals offered just what a baby of that age should take.

At night, to the horror of the doctors, she violated all modern theories. She picked up in her kindly arms the overwrought nerve-tired little thing, and gently rocking her to and fro soothed her to sleep with soft baby songs. Worse than that, when, after dropping off to sleep, baby Toodot began to show signs of returning restlessness grandmother got an old-fashioned rubber nipple, and after washing it until it was scrupulously clean, gave it to the little one to chew and bite.

"Good gracious," said father, "that rubber nipple thing is beyond me. Why, that's just what the doctors told us not to do."

Grandmother looked at him, "When you come home all tired and nervous and you settle yourself in that big arm chair, what's the first thing you do to settle your nerves?"

"Why, I take a cigar."

"That's the answer."

*Pats Drive Away Colic*

At meal times grandmother changed the procedure by picking the baby up and holding it in her arms. Every few minutes she took the bottle away, held the child with its stomach on her right shoulder and patted its back gently with her left hand. Then she would take baby in her arms again, offer more of the bottle, and after a few minutes repeat the performance. This simple procedure worked magic. In a miraculous manner baby took to her bottle as never before, drained it to the dregs and retained every drop. No more vomiting, no more colic.

Under rest, quiet, gentle petting and loving care baby Toodot began to improve rapidly. With rested nerves her appetite increased. With better appetite her bowels became regular. Her weight showed a steady gain and in time her fresh, soft, velvety skin proved her once more a normal child. She still cried considerably, but this crying now was of a different origin, for she was badly spoiled. The diagnosis being established, however, and proper treatment having brought her to health, discipline became logically the next step. Grandmother persistently and firmly insisted on her taking a variety of foods and soon baby Toodot was eating the most satisfactory meals.

*Cured by Common Sense and Good Luck*

For a long time Dr. Albert wondered why he had fallen down on his first case. It was not until some years later that experience taught him the reason for grandmother's success. Was it any particular knowledge on her part? No, it was a happy combination of common sense and good luck.

Her common sense told her that parents, whether rich or poor, whether high or low in the social scale, cannot make a baby anything else than it is—a baby. A baby is just as human as an adult and, if its nerves are continuously insulted and abused with no chance of rest, an infant like an adult breaks down with all signs of nervous exhaustion. Grandmother had no training in physical examination but she did have common sense sufficient to realize that this baby's troubles were not due to disease but to environment. She was in a position to appreciate the effects of this environment far better than the most conscientious specialist who did not spend sufficient time in getting the baby's history.

In regard to her good luck, grandmother had been reared according to some of the old customs and traditions. She knew that in all lands mothers have observed the soothing effect of rocking their babies and all peoples have used means of doing this, from the ingenious cribs rocked mechanically found in some European countries to the crib devised by nature—the mother's arms. And all lands have learned the quieting effect on a nervous child of chewing a simple little rubber nipple.

*Might Have Done More Harm than Good*

Grandmother knew these things. She forgot that many babies may be badly spoiled by being rocked whenever they cry. She did not know that a great amount of harm has been done babies by the use of dirty nipples and that many doctors have described deformities of the jaw resulting from the overuse of such a nipple—so many unpleasant results that the nipple now is practically taboo in medical circles.

With either of these procedures she might have done more harm than good. Fortunately, she met the one and only type of child in which such treatment may be of value—the overstimulated, worn-out little one who above everything else needs nerve rest. For such a child, the use of these simple procedures may prove of greater benefit than other types of medication or treatment.

As Dr. Albert grew older he found ever new elements of truth in traditions he first had ridiculed. The x-ray taught him why grandmothers for reasons unknown to themselves have patted babies on the back at feeding times. When the holes in the nipple are too small, or if a baby takes a bottle when lying down, it often swallows air. When Dr. Albert held such a child before the fluoroscope he saw the swallowed air accumulate in a large bubble in the stomach. Patting the child on the back jarred this bubble loose and forced it up and out, making room for more food.

*Learned Value of Daily Sunning*

Dr. Albert had often wondered at the patient absurdity of mothers who daily take their babies out for a sun bath. Later he learned far better than the mothers themselves of the remarkable chemical effects of the sun's rays, particularly in preventing that disease known as rickets.

The case of baby Toodot was a great lesson to young Dr. Albert. It taught him that there is usually an essence of truth included in much of the absurdity of old tradition. It taught him to attempt always to seek and appreciate the good in addition to eliminating the bad. Above all things, it taught him to discriminate.

# *Aladdin's Lamp for Each of Us*

H. P. McPHAIL

ALADDIN rubbed his lamp and the Genii appeared; and what wonderful Genii they were! What marvelous things they brought to Aladdin—gorgeous jewels, a magnificent palace, slaves galore and a king's daughter for a wife!

Have you sometimes wondered why Aladdin did not ask for something still more important? But perhaps the Genii, with all their skill, could not have supplied it. Had I been Aladdin, I should have asked that I might have ten or twenty added years of youth and middle life; years in which to enjoy that which I had attained; years in which to live new sensations, see new things, acquire new stores of knowledge and rise to new heights of achievements.

### *If We Could Prolong Youth*

Would it not be wonderful to have a magic lamp with which we each could summon Genii, and could command them to give us long years of youth? Beside such a prospect, all the magic of the East pales into insignificance.

Let this picture help you to visualize just what this would mean to you:

John Smith lies on a bed of pain and death; old, withered, decrepit and unloved. His eyes are dim and his mentality dulled, but a spark of life's dying flame flares up for a moment and lights his consciousness with its final glow. In that moment he sees what he *was* and what he *is*. What would he not give for ten years of life—ten years of vigorous young manhood, years in which to tread new paths, think other thoughts, live larger experiences; ten years of added life, not life relived! But no ransom can now suffice.

Each of you has a magic lamp of your own with which you may summon Genii whom you are at liberty to command, and they can give you added years of young life.

The greatest of these Genii will work for you night and day. His name is "Directed Common Sense." By directed common sense is meant native or inherited common sense, aided and directed by the best advice you can possibly obtain. Without him, the other Genii cannot work; nor will any of them work efficiently, except at your command.

Do you know that since the beginning of this century, scientists in the realm of medicine have added five years to life's expectancy? This, however, has largely been attained through reduction in infant mortality.

Dr. Ray Lyman Wilbur, president of the American Medical Association, says: "If the people of the United States were willing to avail themselves fully of what is now known of the control of diseases and the care of the human body, and would spend as much for this purpose as they now do for the protection of the republic from outside prospective enemies, we could ensure an average additional increase of ten years to the span of human life."

We cannot help the past. But by studying the past and by learning the manner in which damage is done to our bodies, we can learn to avoid the mistakes of the past and to direct the tomorrow.

At the Rockefeller Institute for medical research, they have some fiber cells from the heart of an embryo chick. For ten years these cells have been growing and multiplying regularly, until by now, had it been possible to have given each new part an optimum condition for growth, a mass of living matter would have been produced many million times larger than the earth. Though these cells have lived longer than the normal life of a fowl, there is no apparent diminution in their vitality and growth. They may be potentially immortal.

Let us learn under what conditions this apparent immortality is obtained. These cells are kept in the body fluid taken from young, actively growing chicks. This fluid is changed sufficiently often to keep the food supply adequate and to keep the waste material incident to growth at a minimum. The cell mass is also kept small enough so that each part gets unlimited access to the fluid. Two things produce similar results: If the cells are placed in fluid from a full grown fowl or if waste products are allowed to accumulate in the fluid.

growth ceases. The immortal has become mortal.

### *A Mortal Body of Immortal Cells*

When we started on this finite journey, we too were but a single cell, nourished by the surrounding body fluids. But these cells multiplied so rapidly that the mass of cells was soon too large to be properly supplied in this manner. As new needs arose, new groups of cells were formed to meet the demand. Not tracing the process, but noting the results, we find cells to manufacture nourishment, cells to carry that nourishment, cells to eliminate waste matter, others to support the various groups, still others to protect the whole mass. Then there are those mysterious groups of cells whose function it is to keep the various groups working in harmony. Nor has there yet been mentioned the organ of intelligence, that superorgan on the proper functioning of which so much of the body health depends.

But why is a body made up of groups of immortal parts mortal?

Perfect working of the whole depends on perfect efficiency of each of the groups, individually and in unison. This perfection of the part, or perfect balancing of the parts, is not obtainable. The measure of the nearness to this perfection that is attained is the measure of life's optimum expectancy, or the greatest possible length of life under continuous absolutely ideal conditions. To one is given seventy, another a hundred, another a hundred and fifty years; no two alike.

Then how is life's expectancy cut down? How are we robbed of our birthright?

Let us again go back to these groups of cells from the chick's heart. The two conditions that changed immortality to mortality were insufficient food of the right kind and imperfect elimination of the waste products.

### *Proper Food and Elimination Necessary*

Considering the elimination of waste matter, the principal organs of excretion are the skin, lungs and kidneys. The liver is a great chemical factory, one function of which is to prepare certain waste products so that the kidneys may be able to eliminate them. Any condition of ill health that produces a rapid production of waste matter throws extra work on the organs of elimination and secretion. If these organs can perform this duty so completely that there is no interference of cell growth or nutrition in any part of the body, no damage is done; but should elimination be not perfect, old age will advance in proportion to the amount of the waste matter left in contact with the cells, to the toxicity of this waste matter, to the length of time it was left in contact with the cells, and to the vital importance of the cells damaged.

John Smith was an average individual whose balancing of cell groups would, under the continued maximum of favorable conditions, give him a life potentiality of ninety years. He never had any gross disease to cut largely from his life's expectancy. It is true that he suffered from measles, whooping cough and scarlet fever in his childhood, and these had taken largely from the middle years of his life, but he was not responsible for these, although he had to pay the piper.

But the winter that he cut loose and showed the whole town what a real sport was like, he could have saved himself that. The abscessed tooth he was advised to have pulled, the pyorrhea that flooded his system with poison, the cold he neglected in the winter of '84, his overfondness for rich food—these, and a thousand odds and ends that he never took cognizance of, account for the loss of another ten years.

We are not all as sensible nor as fortunate even as was John Smith. Too many years of fairly good health is a disease than which there is none more deadly, but it at least treats you more kindly than most mortal diseases. We speak of fatal accidents and fatal illnesses, yet every illness, whether caused by accident, overwork, too little work, improper eating, poisoning or any cause whatsoever, is death-producing. These will kill the prime years of your life. Every illness and every indiscretion committed against the flesh speeds up cell destruction and slows down cell construction. It increases the amount of waste matter and lessens the efficiency of the organs which have to get rid of this waste. The chick cells stopped growing when waste products were allowed to accumulate.

### *Childhood Diseases Shorten Life*

We cannot measure our march to the grave by any chronometer. We glide not at an even pace; but rather like a child on an errand, now loitering by the wayside, now speeding on winged feet, now skipping and now lagging. We must complete the journey, but to a limited extent we can time it.

If we realized all this, incidents like these would not occur so often.

"Willie Brown has the measles and I think I will let Kate and Mary get them too while Nora can help me with the work."

"Oh, it is just the whooping cough so I think I will let them get it now while the weather is warm and have it over with."

"Charlie is always complaining of growing pains and John wants me to take him to the doctor, but I tell him he will soon grow out of them." Some day Charlie will try to get his life insured and the doctor will say, "I am afraid the company will not pass you with that heart."

Or Johnnie has a sore throat. Grandma has a tea that cured sore throats when she was a

girl. Brother has a remedy he found in the family doctor book. Sister has a friend who knows the cutest doctor who cures just everything by doing something with the spine. But Johnnie, though much remedied, is much worse. So the family doctor is called in. "Diphtheria, heart muscles involved, but he may pull through," he declares. Johnnie pulls through, but in those few days he has lost years of his life.

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# *Something for a Headache*

GIMME something for a headache." The speaker was a well-dressed, intelligent-looking man of middle age. His demand for relief was addressed to a youth in white apron behind a soda-fountain counter, relates the Monthly Bulletin of the North Carolina state board of health.

The youth nonchalantly reached for a bottle behind him, poured a liberal portion of its liquid contents into a glass, filled another glass with water, and dexterously slid the two in front of the customer, casually remarking:

"Ten cents."

### *Took a Long Chance*

The man drank and paid, and departed. Perhaps his headache was presently relieved. But he had taken a long chance.

What the soda-fountain clerk had so nonchalantly supplied, and the customer as carelessly taken, contained a powerful drug of coal-tar derivation. The immediate effect of the action of the drug is to deaden the nerves and depress the heart. It "cures" a headache by hitting the nerves such a sudden and tremendous blow that for a time they fail to register pain, or anything else. So the headache is gone; that is, it is gone from consciousness. Probably by the time the effects of the drug have worn off the internal disturbance which manifested itself in the headache has subsided, and the headache is gone. The drug did not cure it.

### *Headache Is Symptom of Disease*

A headache is merely a symptom, a red flag frantically waved by old mother nature. It tells as plainly as possible that somewhere in the internal regions something is going wrong. Like the knock that will sometimes develop in the engine of an automobile, it is an invitation and a warning to lift the hood and locate the trouble.

Nine times out of ten the headache develops from a mistreated stomach. If it be persistently recurrent, eyestrain may be the cause. If chronic, there are probably foci of infection, such as pus pockets at the roots of teeth or in the tonsils, which are slowly dripping poison into the blood stream.

But whatever the cause, a headache can't be cured by the simple expedient of using a drug to smash the nerves into a state of insensibility. The only sensible way is to make an intelligent effort to find the cause, and remove it.

### *Often Leads to Drug Habit*

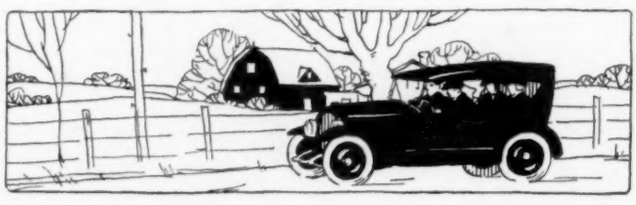
Besides the futility of it, there is a real danger in taking headache medicines. The powders, tablets, capsules and liquids so frequently sold induce drug habits. The one who takes them is a drug fiend. It may not sound pleasant, and the association may not be appreciated, but such a one belongs with the cocain addict, the morphin "dope," the whisky "soak."

Occasionally a large dose of so-called headache medicine kills a person suddenly by overwhelming vital nerve centers. Such cases have occurred in every state. Yet these cases are so infrequent as not to be the principal reason for not using the drugs.

The main reason for not using them is that they harm the blood cells in such a way that they cannot properly carry oxygen to the cells of the body, nor can they carry away body wastes.

He who depends on drug relief for headache is his own worst enemy. He may not commit murder or shoot up the town like the crazed alcohol fiend. He won't have to lie and steal to get his dope like the morphin fiend. But he is taking a short cut to gain temporary relief, and sowing for himself seed that can yield only a harvest of trouble.

The thing must be fought out some time, the real cause found and remedied. It is the part of wisdom to do this in the beginning. To take headache medicine and let it go at that means drifting into deep water. It is the way of the thoughtless or the fool.



# *Fake Diplomas and Unskilled Doctors*

N. P. COLWELL

IN CONNECTION with the diploma-mill activities investigated in Connecticut and Missouri, the great danger from the public point of view is not so much in the sale of medical diplomas as in the ability of those who purchase them to secure licenses giving them legal authority to treat the sick.

Worse than ghouls, who rob the bodies of the dead, are the mercenary wretches who sell diplomas to ignorant and unscrupulous persons and those who, without first securing a thorough training in the fundamental branches of medicine, deliberately assume the responsibility for the lives of people already in distress from sickness or injury.

The efforts of such pretenders, in fact, frequently waste the precious moments during which the lives of the patients might be saved if they were under the charge of skilled physicians. Appalling results from the practice of certain "counterfeit" doctors have been revealed in the investigation recently made in Connecticut.

### *Menace from Incompetent Doctors*

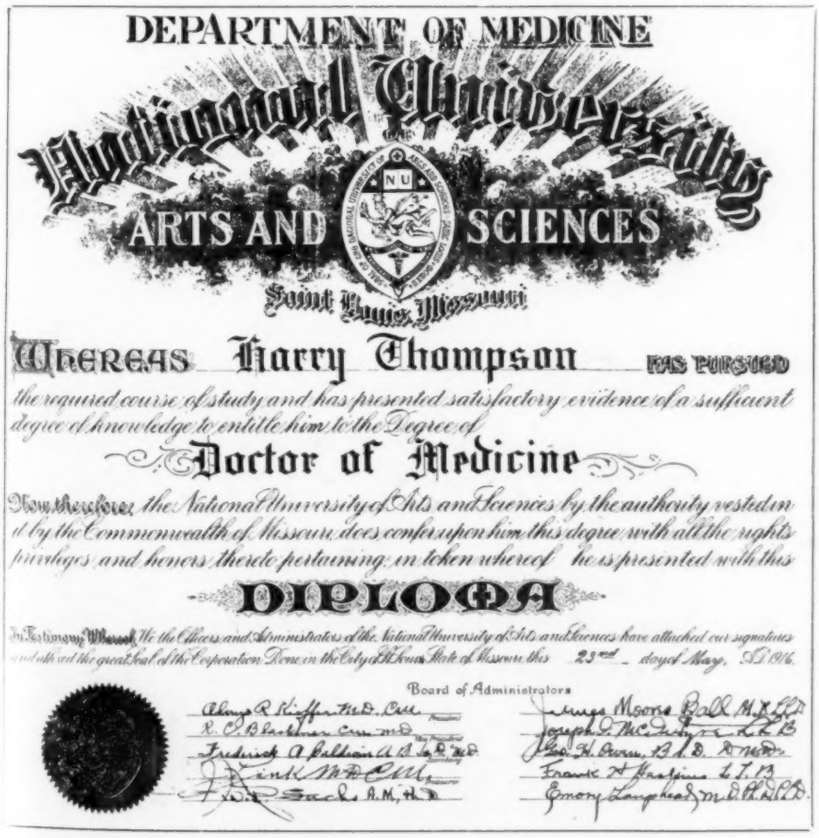
The granting of licenses to persons who are not qualified, either by education or special training, in the sciences fundamental to the practice of the healing art is more serious than ever before and has become a real menace to the public. This is because more technical and delicate procedures and curative measures are now being employed in the treatment of diseases; these can be successfully applied only by those who are skilled in their use and they are extremely dangerous to the patient if attempted by incompetents.

Surgery, for example, is always a dangerous procedure, except in the hands of skilled surgeons. It was not developed until the bacterial origin of many diseases and the way to prevent wound infection and blood poison were discovered.

Surgery, which formerly was employed only as a last resort, is now commonly used and is saving thousands of lives. Skilled surgeons have now found it possible to relieve certain conditions of the brain and heart, which heretofore were believed to be beyond the reach of surgical skill. Imagine such attempts being made, however, by the unskilled and by bunglers!

In recent years, also, certain chemicals, serums, the roentgen ray, radium and other agencies have been found to have great curative or diagnostic value, but are exceedingly dangerous unless employed by those skilled in their use.

It is extremely important, therefore, that adequate legal safeguards be established to protect the public against unskilled and unscrupulous doctors. The need of such safeguards has long been recognized by reputable physicians and efforts have been made to secure them. Not only have medical schools been improved so that



DEPARTMENT OF MEDICINE

National University

ARTS AND SCIENCES

Saint Louis, Missouri

Whereas Harry Thompson has pursued the required course of study and has presented satisfactory evidence of a sufficient degree of knowledge to entitle him to the Degree of

Doctor of Medicine

Now Therefore, the National University of Arts and Sciences by the authority vested in it by the Commonwealth of Missouri, does confer upon him this degree with all the rights privileges and honors thereto pertaining, in token whereof he is presented with this

DIPLOMA

In Testimony Whereof, We the Officers and Administrators of the National University of Arts and Sciences have attached our signatures and affixed the great Seal of the Corporation Done in the City of the Gateway State of Missouri this 23rd day of May, A.D. 1916.

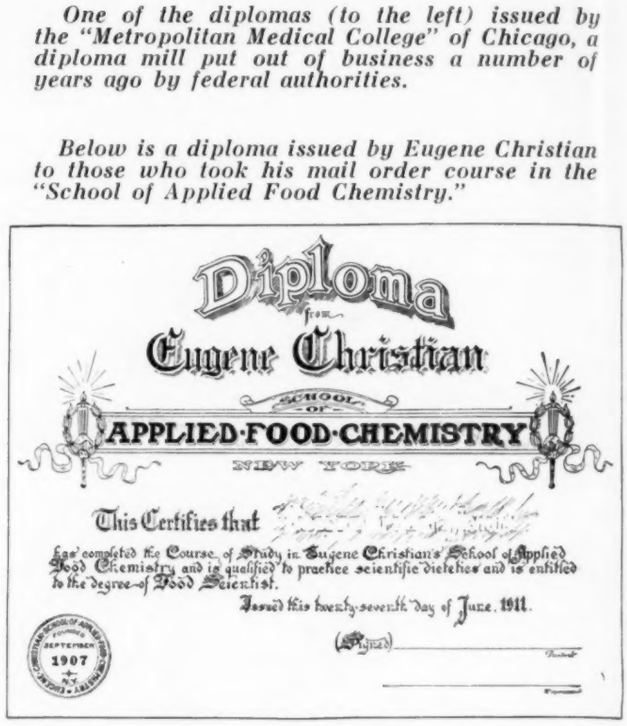
Board of Administrators

*A reproduction of the diploma alleged to have been purchased by a St. Louis Star reporter, Harry Thompson Brundige, who posed as "Harry Thompson." It is claimed that the diploma was sold by Dr. Ralph A. Voight of Kansas City, Mo., in September, 1923. The date of graduation is given as May 23, 1916. The National University of Arts and Sciences went out of existence in 1918.*

Collegium Medicinæ Metropolitanum
CHICAGO, ILLINOIS, U.S.A.
SALUTEM.
Daniel Wellington Mott
Medicinæ Doctorem
In cujus rei testimonium
UNIVERSITATIS SIGILLO
A. B. Opicka M.D. J. B. Rullman M.D.

*One of the diplomas (to the left) issued by the "Metropolitan Medical College" of Chicago, a diploma mill put out of business a number of years ago by federal authorities.*

*Below is a diploma issued by Eugene Christian to those who took his mail order course in the "School of Applied Food Chemistry."*


Diploma
from
Eugene Christian
SCHOOL OF
APPLIED·FOOD·CHEMISTRY
NEW YORK
This Certifies that
has completed the Course of Study in Eugene Christian's School of Applied Food Chemistry and is qualified to practice scientific dietetics and is entitled to the degree of Food Scientist.
Issued this twenty-seventh day of June, 1911.
(Signed)
SEPTEMBER 1907

physicians are now better trained, but also better laws regulating the practice of medicine have been passed.

Since 1900, through a campaign carried on by the American Medical Association, greatly improved conditions have been secured in the medical schools of the United States. All medical schools were inspected and rated in classes A, B and C.

At that time this country had 160 medical schools—more than in all the rest of the world—but only a few of them were equipped to provide a satisfactory training in medicine and only two required more than a high school course for admission. The total number of schools has been reduced to eighty; of these, seventy-five require for admission two or more years of college work and are otherwise greatly improved. Larger endowments or state appropriations have been secured; new buildings have been erected; more and better equipped laboratories have been established; a larger number of better trained teachers has been employed; closer relations with dispensaries and hospitals have been brought about; and greatly improved methods of teaching adopted.

The securing of endowments for medical schools has been particularly rapid since 1910, through the cooperation of the Carnegie Foundation for the Advancement of Teaching and the General Education Board. Those who now graduate from medical schools are provided with a degree of knowledge and skill never before obtainable by medical graduates.

In 1907, after the first inspection had been completed, there were eighty-one medical schools in Class A, the highest grade; forty-seven in Class B, and thirty-two in Class C, the lowest grade. At the present time under a higher standard of measurement there are seventy medical schools in Class A, four in Class B, and only six in Class C; some of these lowest grade institutions have refused to admit the inspectors. Class C colleges are so graded for varying reasons, such as: Irregular, questionable or disreputable methods of control; low, nominal or no entrance requirements; inadequate teachers, laboratories, equipment, dispensaries and hospitals; and poor teaching methods. It is significant to note that the diplomas sold by the recently exposed diploma-mill ring of Missouri were from medical schools in this group or others of like stamp which have become extinct.

### *Better Medical Practice Laws Needed*

Through the gradual improvement of medical practice laws and by means of more rigid examinations conducted by state licensing boards, the public in all but a few states has been safeguarded against the inferior product of these medical schools. None of the diplomas sold is of any value unless its holder can secure a license authorizing him to defraud the sick, and this cannot be obtained in the majority of states.

It is interesting to note that the diploma purchasers were taken by the trainload to Connecticut, half way across the continent, because in that state it was easiest for them to secure licenses giving them legal authority to treat the sick. It was next easiest in Arkansas, and barely possible in a few other states, while

in all other states legal safeguards debarred them. Establish strong safeguards to protect the public in these few remaining states, and all the fake diploma rings will have to go out of business.

The warning against incompetent physicians, however, applies with equal force to all others who seek the legal right to treat the sick regardless of the "isms," sect, or system of healing which they may advocate. They act as substitutes for physicians and assume the responsibility for the lives of the patients they are called to treat. Before granting them permission to practice, therefore, they should be required to possess a training in the sciences on which the healing art depends.

Progressive College of Chiropractic
CHARTERED UNDER CHICAGO, ILLINOIS LAWS OF ILLINOIS
To all to whom these Presents shall come, Greeting:
Be it known that Harry Thompson has successfully completed the course of instruction as prescribed by this institution and has to the satisfaction of the faculty and board of directors passed all examinations on the required subjects pertaining to the philosophy, art and science of Chiropractic and is therefore granted this diploma and has conferred upon h the degree of
DOCTOR OF CHIROPRACTIC
with all the rights and privileges pertaining thereto
In Testimony Whereof, we the officers and faculty of this college have hereunto set our hands and seal this FIRST day of MARCH 1923

*The St. Louis Star reporter also is said to have bought a diploma from the "Progressive College of Chiropractic" of Chicago, run by Henry Lindlahr. The same Dr. Voight of Kansas City is alleged to have made the sale.*

Unless they are familiar with the normal structures and functions of the human body, how can they know whether a patient is sick or well? Unless they have had the opportunity to study all kinds of diseases, how can they know from what disease the patient is suffering? Unless they have knowledge of the many useful remedial agents and methods, how can they select the one most needed by each particular patient?

A method that may help one patient may injure another. A patient sick with diphtheria, for example, needs first to be isolated so as to prevent the spread of the disease to others; then antitoxin must be administered and the other routine treatment followed. Merely to apply massage to such a patient would be disastrous, both to the patient and the public.

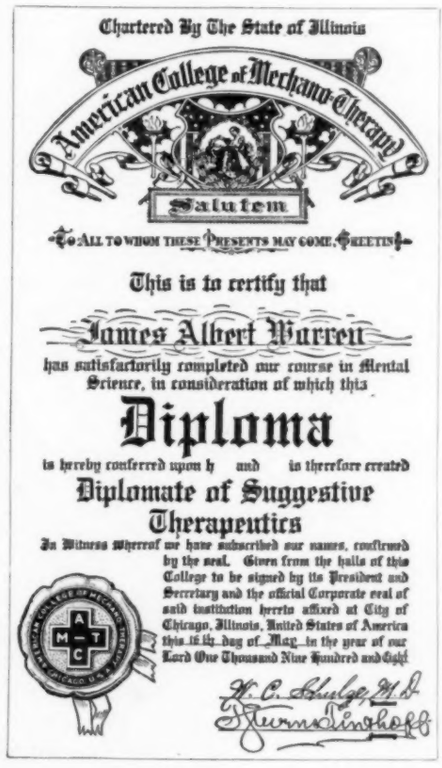
Patients that have taken poison, accidentally or otherwise, require prompt use of antidotes, most of which are themselves powerful drugs. Here again, the use of any other method, such as rubbing the spine, waiting on nature, or the application of heat, would be so futile as to be positively criminal, since, if the dose of poison is sufficiently large, the patient will die from neglect.

Some cases require surgery, some require medicinal substances, some massage and some other methods. Whoever assumes the place of the physician, whether called by that name or not, should be equipped to meet any emergency and, therefore, should have a training no less than that obtainable in our best medical schools. If he desires to specialize, that should be done after he has completed his general training.

The different methods of treating diseases, taken singly or in groups, are comparable with the various instruments in an orchestra. Before any one is competent to play in an orchestra—whether it be on the violin, the cornet, the slide-trombone, or the bass drum—he must first have received a thorough training in the fundamentals of music. This is necessary so that he may know not only *when to play*, but also—just as important—when he should *not play*. In fact, a note in the wrong place from any instrument is usually more disastrous than if the player fails to respond when he should.

So in the practice of the healing art: Every one who treats human diseases and disorder by any special method or system of treatment, regardless of what that method is, should have a thorough training in the fundamental medical sciences so that he may know, not only *when to use* the particular method he is specializing in, but also—just as important—when that method *should not be used*.

Here again, the use of a wrong remedial agent in the treatment of a patient may be more disastrous than if such treatment is not used at the


Chartered By The State of Illinois
American College of Mechano-Therapy
Salutem
To All To Whom These Presents May Come, Greeting:
This is to certify that
James Albert Warren
has satisfactorily completed our course in Mental Science, in consideration of which this
Diploma
is hereby conferred upon h and is therefore created
Diplomate of Suggestive Therapeutics
In Witness Whereof we have subscribed our names, confirmed by the seal. Given from the halls of this College to be signed by its President and Secretary and the official Corporate seal of said institution hereto affixed at City of Chicago, Illinois, United States of America this 15 day of May in the year of our Lord One Thousand Nine Hundred and Eight
W. C. Sludge, M.D.
Secretary

*A diploma in "Mental Healing" that "is a work of art, handsomely executed in two colors" may also be had, price $10. "This includes everything, diploma and all. No extras."*

time the indications call for it. The omission of the right treatment may indeed have serious results; a wrong treatment may result in the death of the patient or seriously complicate his trouble. To insure efficient care of the sick, therefore, a scientific education is required.

The minimum standard of education now deemed essential in all civilized countries for practitioners of the healing art is that now required by all Class A medical schools; this should be the minimum requirement in this country.

This standard includes: Completion of a secondary school course equal to the four year high school course of this country; two or more years of work in a good college, including courses in physics, chemistry and biology; a four year course of training under skilled medical teachers in anatomy, physiology, bacteriology, hygiene, pathology, pharmacology and physiological chemistry, along with the study of all types of diseases in the examination and care of sick and injured persons in dispensaries and hospitals.

Finally, the student should spend at least one year as an intern or resident physician in a large general hospital, where he learns to apply his knowledge and to develop skill while he is still under supervision.

*Confusion in Licensing Doctors*

Many states have adopted splendid laws, which are being administered by boards of competent examiners, and are admirably protecting the people against incompetent and untrained *physicians*. Unfortunately, however, other laws have been passed providing separate examining boards to license *other practitioners* who are not qualified by education and training to be substitutes for the physician.

Such arrangement is an actual menace to the public. It has been found, indeed, that these "other practitioners," after being licensed, are left free to assume all the functions of the physician and to attempt even the dangerous and technical methods which, for their successful use, require the highest training and skill. For the protection of the public, therefore, legal safeguards should be established including (*a*) one reasonably high standard of medical training for all who are legally authorized to care for the sick, and (*b*) one board of authority of competent examiners with full authority to enforce that standard.

Since physicians are required to possess training, why should it not be required also of all others who are to treat the sick? All that physicians ask for is an American "square deal." Granted that there is some good in the methods of healing employed by practitioners other than physicians, that good will in no way be diminished if those employing such methods are first required to obtain a thorough training in the fundamental medical sciences. Require everyone who wishes to practice the healing art to show he possesses the proper education, then grant him a license as a physician and let him use any method of treatment which his educated common sense may indicate!

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# *Exercise Among the Authors*

**"There is no kind of exercise which I would recommend to my readers of both sexes as this of riding, as there is none which so much conduces to health."—Sir Roger de Coverly Papers.**

AS TO the exercise which conduces most to health, there has been much disagreement; for many literary men have disagreed with the Spectator in their writings.

Bacon thinks that different exercises benefit different parts of the body, and would have a man's exercise determined by his own individual needs—which is the accepted present theory. For the kidneys Bacon recommends bowling, presumably the good old game of bowling on the green, which gave the name to Bowling Green, Ky., and to various other bowling greens scattered over the English-speaking world. Shooting he thinks good for the lungs and breast; "gentle walking for the stomach; riding for the head, and the like."

Dozens of authorities hold that walking is the best of all possible exercises. Dr. Oliver Wendell Holmes makes out an excellent case for boating, preferably rowing in a shell, at the same time acknowledging the attraction of walking, "an immeasurably fine invention, of which old age ought constantly to avail itself."

As to riding, Dr. Holmes says: "Saddle leather is in some respects ever preferable to sole leather. The principal objection to it is of a financial character. But you may be sure that Bacon and Suydenham did not recommend it for nothing.

"One's hepar—or, in vulgar language, liver—a ponderous organ weighing some three or four pounds, goes up and down like the dasher of a churn in the midst of the other vital arrangements at every step of a trotting horse. The brains also are shaken up like coppers in a money box."

The one drawback to riding, other than the financial, he holds to be the fact that "in riding on horseback you always have a feeling that, after all, it is not you that does the work, but the animal, and this prevents the satisfaction from being complete."—*The Chicago Evening Post.*

# Varicose Veins

KELLOGG SPEED

ALMOST every one has seen persons with bluish bunches of veins beneath their skin and knows that such a condition is spoken of as varicose veins. But not every one knows what causes these swollen veins or what are the best methods of treatment for them.

Just as an automobile tire bulges and weakens after long usage, so may our veins—which are merely soft tubes conducting the blood—bulge and stretch until their valves no longer act efficiently to hold up the blood column.

Under such circumstances, the vein wall stretches farther and is constantly overfull of blood, so long as the person remains in an upright position. As veins assume greater size, they tend to be apparent beneath the skin.

The popular idea is that only the veins of the leg may become varicose, or enlarged. This is not correct, for any set of veins in our bodies may become swollen and inefficient, and may appear as bluish bunches beneath the skin.

Veins in the legs have at different levels within them flap-like valves. Blood returning from the feet, pulled back by the heart and pushed along by muscular exertion, climbs a certain distance and then cannot slip back again below the valve.

### *Causes of Swollen Veins*

What are the causes of this condition? They are numerous, but among them are: Mechanical influences, such as prolonged standing, with overfatigue and weak heart action; overweight of the individual with too much blood; pressure on the veins along their course, as by tumors within the abdomen where the veins disappear from their superficial path to dodge into the abdomen and run up along the spine to the heart.

With greater frequency, however, inflammatory conditions of the veins act as causes. Nature provides our legs with two general sets of veins, one deep down near the bones, hidden and covered by strong muscles, the other set superficial, passing through the loose fatty tissue lining the skin. The deep set frequently becomes inflamed in such conditions as typhoid fever, milk leg of pregnancy, or in prolonged illness that weakens the individual and keeps him long confined to bed without any leg exercise. These veins then become plugged and the superficial set which communicates with them must enlarge to carry the load. Heart disease really has little to do with the condition.

When the blood becomes dammed back, the vein walls lose their elasticity and soon the bluish, distended and knotted masses appear beneath the skin. By pressure against the skin they cause the normal fat to be absorbed, the skin thins, becomes irritated and may even change its color, taking on a brownish or bluish hue.

### *Skin Scales and Itches*

This skin is deprived of normal vigorous circulation and nourishment and reacts by drying, sometimes scaling and becoming itchy. The individual may unconsciously scratch his skin in sleep and in small knocks received on his legs he may do more damage to the weakened integument so that it begins to ulcerate.

Varicose ulcers, when scratched or irritated, may become infected with the bacteria that are always present on the skin surface. Pus forms and its destructive action is added to the other factors present. Such an ulcer becomes reddened, swollen, throbbing, painful, and forces the individual to seek immediate relief.

An attack of this nature may yield to rest and careful cleanliness of the skin involved. The whole condition, however, tends to recur when the man tries to walk about and work again. Ulcers, whether infected or not, must close by the formation of scar tissue. This is not as healthful and strong as normal integument, and is usually covered by a thin layer of shiny skin, leaving the ulcer liable to break open again from slight cause.

### *What the Doctor Will Advise*

1. The treatment must first be rest, best with the legs elevated so that the blood may have a better chance of returning freely toward the heart.

2. Healing applications such as lotions or ointments may relieve the itching and heal the ulcers, but when normal activity is resumed the dammed back blood again starts to cause trouble.

3. Elastic stockings, which make firm, uniform pressure over the whole leg, may help press the blood on up over its natural course.

4. After a certain stage of the disease is reached, especially after ulceration, prolonged rest from the upright position alone will help. To aid this, the surgeon frequently removes the whole length of distended broken-down vein. The operation should be followed by a suitable rest to permit the development of new pathways over which the blood returns to the circulation.

# *Mothers of the World*

*International*

A young Laplander spends most of his early months swinging in a cradle, like this one, on the back of his busy mother. When her outdoor tasks are finished, she will retire to the family hut; then "down will come baby, cradle and all."

This mother of another far country, the Polynesian Islands, has a cradle for her little brown baby that swings from her head. It costs practically nothing to dress Baby Polynesia, and the mother never worries lest his complexion be injured by the sun.

*International*

*International*

*Mvrzaoff*

While mother sells peppers, baby looks solemnly on. She is serving an early apprenticeship in the ancient trade of street vending. The scene is in Korea and mother and child are native Koreans.

Centuries of bloodshed and oppression have left their traces in the wistful eyes of this child-mother of Armenia. Is she perhaps wondering if history will again repeat itself within the lifetime of her offspring?

**This is the first of a photographic series depicting Mothers of the World.**

# Setting the Stage with Health

JAMES A. TOBEY

THE play's the thing in public health these days. This method of education in health is one of the best, and health playlets are becoming more and more popular. The movement has even reached Broadway, where, a year ago, Henry Miller delighted large audiences with his "Pasteur."

Many notable health dramas have not yet been honored with presentation on Broadway, however, for they were written for production by small groups of children, who have facilities only for meager scenery and modest costumes. The zest with which these health plays are given and the delight with which they are received augur well for their success. It has been said that, if everyone knew the true principles of hygiene and applied them, there would be a great diminution in the amount of sickness. The health play assists in putting before people these principles of public health. It is neither a lecture nor a picture, but is something of a combination of each. It appeals to logic as well as sentiment and emotion and can easily be understood. In short, it is—a play.

*Washington, D. C., Tuberculosis Assn.*

*Boys and girls at the national capital put on a health play.*

### *Twenty-Five Best Health Plays Selected*

The twenty-five best health plays have recently been selected by a committee of the National Health Council. A booklet describing each in detail has been issued, and one of the member organizations of the council, the National Tuberculosis Association, 370 Seventh Avenue, New York City, has undertaken to distribute thirteen of these plays in pamphlet form. The other twelve may be obtained from various health associations, the addresses of which are given in a descriptive folder which is available without cost. The National Tuberculosis Association was one of the pioneers in this field, having issued fifteen such plays in leaflet form in 1915.

These hygienic theatricals, or theatrical hygienics, are available for all age groups from the kindergarten to the college. For children from five to seven years, for instance, we find one called "The Magic Oat Field." Here is the plot: A fairy is unhappy because a witch has cast a blight on her oat field, the field, you know, which provides healthy food for boys and girls. The fairy calls in Persian Cat, who, together with Cho Cho, a good health clown, goes after the witch. They capture her, bind her in chains, and the magic oat field becomes vigorous and fruitful. What more could an audience of very young children ask than this? This play is one of several issued by the health education section of the American Child Health Association, another one of the members of the National Health Council.

Children of different ages must be provided with different kinds of plays. Naturally, boys about to enter high school are not going to waste time going to see mushy "kid" stuff. They want something virile, with action in it, something like "The Highwayman Comes Riding."

In this play, the scene of which is laid in England in the eighteenth century, the king's son is sent away from London to avoid an epidemic of smallpox. He is said to be a puny, sickly young man and two dissolute noblemen plan to kidnap him, thinking it will be an easy task. For this purpose they hire a famous highwayman. It turns out, however, that the supposed highwayman is the prince himself, a big strapping fellow, so the plot fails. The play is full of exciting incidents, plot and counter-plot, fights and clean humor, but through it all runs the moral that health makes strength and that without health no great thing can be accomplished.

### *Girls Enjoy "The Theft of Thistledown"*

"The Theft of Thistledown" is one of these twenty-five plays which is written for the ten to twelve year olds. Its charming dialogue especially appeals to the girls, as does the theme on which it is based. Thistledown is a pixie who steals an earth baby and brings it to the

*Mississippi Health Crusaders charge on the Dragon, Disease.*

court of the Fairy Queen. He is greatly exhausted by his trip, so much so, in fact, that he swears violently in fairy profanity, using such shocking language as "Acorns and Angleworms." The Queen is cross at the pixie and orders him to return to earth with "the thing which mortals love most, and of which they take the least care," and teach mankind the proper methods of preserving the health of these babies.

The essential features of these plays for health are that they present a positive health message, they are not morbid, are well constructed from the dramatic standpoint, and are scientifically accurate. Furthermore, the plays are simple. One scene is usually all that is practical and costumes are not so elaborate as to be out of reach. Many of the plays are adaptable, so that they may be produced either simply or lavishly. Music and dancing can generally be interpolated and many of the plays can be given out of doors. Lack of funds is no detriment to the production of a health play, moreover. There are no disheartening royalties and the expense may be practically negligible.

Beauty, color, human interest, humor and effective dramatic episodes may be found in this collection of plays. "Pirate Percy and the Slovenly Sloop" is an example of a simple play for boys which abounds with unobtrusive fun. The story is about a sea captain captured by Pirate Percy, the Robin Hood of the sea. The captain refuses to wash, but when threatened with the punishment of walking the plank, he realizes he will get wet, anyway, and so consents to bathe.

In the "Jewels of Cornelia," the jewels of health, Ruby, Emerald, Pearl, Opal, Topaz, Amethyst and Turquoise, together with the two diamonds, representing the children of Cornelia, the modern mother, form a picture that glows with color.

The "Spirit of the Double-Barred Cross" is a pretentious pageant of great beauty, which depicts the antituberculosis movement. "Seven Keys" is another such pageant in which the seven keys that denote seven rules of good health are sought and found.

The red flower of Apollo was the peony. Now, Apollo was the physician to the gods and so his red flower was the flower of health. In the play which bears the caption "The Red Flower of Apollo," a beggar, ragged, but a handsome fellow, approaches a garden gate, and stands there quietly in the sunlight. The persons in the garden are busy with other things and so do not notice him. The audience perceives him, though, and wonders who he is and what he does there. Gradually the players become aware of his presence, cease talking, laughing, or working and turn toward the gate.

Thus, this beggar becomes the center of attention. There is a brief and effective pause; then Flora, the fair haired girl in the invalid chair, speaks to him. He enters and in order to earn a crust of bread tells a story. It is a tale about this red flower of Apollo, and how it could bring health to the sick. This is a strange coincidence, for when the curtain rose, Cornelia, the mother, had been discovered reading in the garden to her two children and the very story she had read was about this same Apollo and his red flower. Then, the old gypsy woman who came in later had prophesied some strange thing about Flora regaining her health. The audience is quite excited about it.

That evening the two children come to the garden to seek the red flower. Much to their surprise, the marble statue of Apollo himself comes to life, descends from his pedestal and offers to help. He summons various flowers, but Flora, who has come in, does not find the red peony among them. The beggar returns and tells her to plant that flower herself. The second scene has added considerably to this mystery.

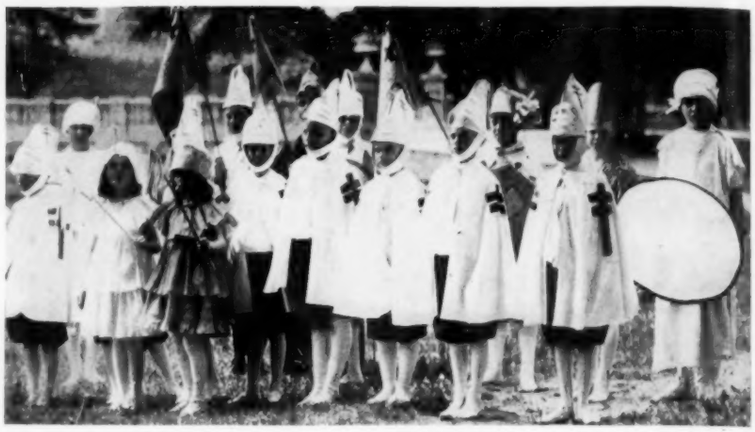
In the dawn of a day several months later, the beggar returns once more. He finds Flora now well and strong. It turns out that he is not a beggar at all but a famous scientist, who has recently discovered the yellow fever germ. So he, too, has found the red flower. Not a beggar, we said, but he claims that he was begging for Flora's heart and the red rose she gave him in

the first scene signifies love, just as the red peony typifies health. It is a fair exchange, after all. And the audience, delighted that the hero wins the heroine, applauds with all its might, as the curtain falls.

*All Have Been Produced*

Among the plays not already mentioned in this list of 25 health dramas are the following: "On the Road to Health and Happiness," "A Pageant of Average Town," "The Brushes' Quarrel," "The Magic Basket," "A Fantasy of Foods," "David and the Good Health Elves," "The Quest for the Fountain of Youth," "Playing Visit," "The Passing of the Littlest Pageant," "The Adventure of Everychild," "The Mountain Meadow," "Princess Rosy Cheeks," "The Health Champions," "King Good Health Wins," "Mother Goose Up to Date," "Milk Fairies," "Nobody's Case," and "Prince Caloric and Princess Pieta."

All of these plays have actually been produced. They have been acted and the acting of them has served to teach a lesson of great importance. Health needs to occupy the center of the stage for every one. We are all players in the drama of life; some of us are but indifferent actors, and some of us appear for too short a period.



*Washington, D. C., Tuberculosis Assn.*

*Awaiting their cue—a group of knights and ladies in the "wings" of an outdoor theater.*

The golden age of childhood is the time to begin to play the game earnestly and efficiently. If these health plays serve to do their part in bringing good health a little closer to the lives of many children, they shall have done their part in human progress.

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## *Stop Stuttering and Stammering*

TO TRAIN a stutterer or stammerer out of his stutterings or stammerings is indeed a noble work. Many parents and teachers, by a little effort, could save children with such speech defects long years of embarrassment and agony if they would set about it.

Wisdom, patience, kindliness and a knowledge of causes and treatment of these twin afflictions are necessary. Among the causes of stuttering and stammering are hereditary predisposition, lack of proper training in early childhood, fright, diseases of various kinds, especially nervous affections, and in many cases mimicry.

Of the two speech maladies, stammering is by far the more serious. Stuttering is the repetition in rapid succession of syllables or entire words, the speaker being unable to leave one syllable and proceed with the articulation of the next. Stammering is a temporary inability to express the thought which the individual has in mind. This is caused by a spasmodic contraction of the muscles involved in speech.

Some steps in correcting these two speech evils are told in the *Nation's Health* by Dr. B. E. Crawford of Sioux Falls, South Dakota. Among them are the following:

Encourage the child to take time to consider what he wants to say before he begins to speak. Do nothing to excite or startle him.

Teach the child to speak slowly and in a measured voice, pronouncing every syllable distinctly, somewhat as in scanning poetry. Have him practice reading aloud every day, either to himself or an audience.

Give special attention to the child's general health, for with the body in perfect health it will be much easier to overcome wrong habits and gain control of the organs of speech.

Let him get plenty of exercise every day in the open air. Horseback riding, rowing, skating, tennis, chopping or sawing wood, and general farm work are all good exercises. Walking, running and jumping help.

Another splendid exercise for muscular coordination, which results in accuracy and self control, is tossing balls. Two balls should be used, one in each hand. First use the right hand, tossing the ball eight or ten feet into the air, catching it with the same hand. Repeat this a number of times and then use the left hand in the same way. Next alternate the two; then use both together. When this becomes an easy task, two or more balls may be used with each hand, catching one while tossing the others.

After parent, teacher and child have done everything they can, if there is still no improvement, Dr. Crawford advises that the child be sent for a few weeks to some good school for stutterers and stammerers.

# The Fly as a Menace to Health

C. F. GREEVES CARPENTER

IN SPITE of all the educational campaigns that have been conducted in the past against house flies, there is still a lamentable amount of ignorance—or perhaps indifference—current about the harmful effects of flies.

Flies are exceedingly dangerous to mankind, and strenuous efforts should be made to exterminate them by clearing up their breeding places. Due to lessening of horse-drawn vehicles in cities there is much less manure, and consequently a marked decrease in their number.

Flies are equipped with sucking mouth parts to imbibe liquids and, with the exception of the stable fly and a few others, do not bite. The biting flies, however, settle on the skin of human beings as well as that of animals, piercing the skin and causing the blood to flow.

There are several flies that frequent the house, and they look somewhat similar in appearance. These are the common house fly, the stable fly, the cluster fly, the blow fly, the fruit fly, and a fly which is similar but smaller than the common house fly, and is generally known as the lesser house fly.

### *"Filth Fly" Good Name for House Pest*

A few years ago it was suggested by Dr. L. O. Howard that the common house fly should be called the "typhoid fly," and later it was proposed by another entomologist that it should be called the "filth fly." Neither of these names has clung to the insect, which is still thought of by thousands as the house fly. Both of the proposed names are correct, though perhaps the latter is so in a broader sense than the former. The fly is not only a carrier of typhoid, but will carry that as well as other deadly germs; "filth fly" is in a way more appropriate as flies breed in manure, human excrement and rotting vegetation.

The female fly lays from 100 to 130 eggs at a time, and probably as much as four batches of these during its lifetime, which means from 400 to 520 young per individual!

### *Breed with Amazing Rapidity*

Eggs are usually laid in the cracks and crevices of places where manure is stored, near the top, in order to receive the heat caused by the fermentation of the manure below. Several flies may deposit their eggs in the same place and, under favorable conditions, these hatch in from eight to twenty-four hours into small, transparent maggots.

Maggots mature in from four to six days, and become cream colored. They are extremely restless when full grown and seek suitable places under manure, boards or even in the ground in which to pupate. The pupae are chocolate colored and resemble a sausage or small barrel in shape. They remain in this stage from three days to many months, depending on the temperature. During the summer months from three to four days is the usual period which elapses before the emergence of the adult fly. The newly emerged fly will work its way up to the surface of the soil or manure, and remain on the surface while its wings and body are hardening. Flies quickly mate and in a few days the females are ready to deposit their eggs.

Those flies seen about houses during winter are usually the cluster flies, but occasionally, where food and suitable breeding places are plentiful in heated houses, other flies may spend the winter breeding and living on food. The common house fly as a rule passes the winter in either the larval or pupal stage and is rarely seen in the adult stage during winter.

### *Fly Collects Germs on Its Bristles*

Their nauseous habit of breeding in manure and rotting vegetable matter is extremely objectionable, especially when it is realized that these same flies settle on our unprotected food and drink. Worse than this, however, is the fact that as its body and legs are covered with bristles, the fly when crawling over infected substances, such as human excrement from people suffering from intestinal complaints, typhoid or tuberculosis, collects the germs of these diseases, and later crawling on our bread, meat, and round the edge of milk bottles transfers these germs to our food. It will readily be seen how easy it is for these germs to enter the human system.

It is never worth while to take chances with unknown diseases, and there is always the danger of getting some disease germ by eating anything with which a fly has come in contact.

Still more perilous to our safety than the certainty of flies as carriers of disease germs is the fact that bacteria live in the alimentary canals of the flies, which means that their excrement in the form of spots of matter is abounding in injurious bacteria.

Protective measures are essential. Food contaminated by flies may give one typhoid, dysentery, tuberculosis, smallpox or infantile diarrhea. It therefore behooves each one as an individual, and as a part of the community, to

see that houses are properly screened, fly poison used in rooms—there are several excellent fly sprays on the market—and that all food is kept covered until eaten.

*Shops Should Keep Food Covered*

Restaurants ought not to be allowed to place shortcakes, pies and other edibles on uncovered racks, making them tempt alike the man ignorant of the danger of eating such food and the loathsome fly. Proprietors of bakeries, vegetable and meat markets and other establishments selling edibles should be compelled by law to keep food covered, and the use of various traps against the flies should be required.

Covering food stuffs with one thickness of cheesecloth is insufficient, as the legs of the flies can penetrate through to the food. If such a covering is used, it should be made into a rack which will allow of stuff being placed under it without coming in contact with the cloth. If the public persisted determinedly in refusing to purchase food so exposed, the danger would soon disappear.

*How to Clean Up Breeding Places*

Stables are the principal breeding places of flies, and no matter how frequently the manure may be removed there is likelihood of maggots escaping to the soil and there pupating. In order to remedy this, all stables should have concrete floors, and the manure should be removed daily to tight bins from which it would be impossible for flies to escape.

A conical flytrap could be placed on top in order to permit any flies that would emerge in the stored manure to come out and then be killed. If these bins are emptied when full, and the manure *thinly* spread on the soil it will quickly dry out, and this condition is very unfavorable to the development of the fly.

When manure is kept in heaps, it should be sprayed with a mixture recommended by the bureau of entomology of the U. S. Department of Agriculture: one-half pound hellebore to every ten gallons of water. This quantity suffices for eight bushels or ten cubic feet of manure. The mixture should be stirred and then allowed to stand for twenty-four hours before using.

From reports made by the division of chemistry of the U. S. Department of Agriculture, it is proved that treating the manure in this manner does not deduct from its fertilizing qualities.

Box privies should be liberally treated with unslaked lime daily in order to avoid the breeding of flies in fecal matter.

Swatting flies is dangerous, for in crushing the bodies germs are spread; the most effective way is to eradicate their breeding places.

Persons, particularly babies, sleeping in the open should be covered with mosquito netting, not only because they can sleep better by avoiding the irritation of flies, but because of the deadly germs the flies carry.

*Stable Fly Can Carry Sleeping Sickness*

The stable fly closely resembles the common house fly, and it is difficult to distinguish them except in their feeding habits. The stable fly is able to pierce the skin of animals and human beings, causing blood to flow. Owing to the fact that these flies go from one person or animal to another before becoming full-fed, they are apt to act as transmitters of such diseases as anthrax and glanders, and because they are attracted by human excreta, they carry intestinal diseases.

The eggs hatch in from two to three days at a moderate temperature. A period of from two to three weeks is spent in the larval or maggot stage, according to the amount of moisture or the temperature in breeding places. About two weeks are spent in the quiescent or pupal stage before the emergence of the adult fly. It has been proved that this fly, as well as the tsetse fly in tropical countries, by attacking an animal infected with trypanosomiasis (sleeping sickness) can convey the trypanosomes to healthy animals.

The cluster fly is larger than the common house fly and has a dark-colored abdomen. It is very slow in its movements, and can easily be captured. It is found in houses throughout the fall and spring, usually in clusters on the walls or ceiling; hence the popular name.

Blow flies are the familiar green or bluebottle flies found on dead animals and different excreta. These sometimes enter houses and, if opportunity permits, lay their eggs on meat which, twenty-four hours later, will be covered with a squirmy, writhing mass of maggots. Blowflies are exclusively carrion feeders.

*Lesser House Fly Also Dangerous*

Fruit flies are minute flies more commonly known as pommace flies. They confine their attention to fruit for the double purpose of eating and laying their eggs, for the larvae live in decaying vegetable matter, in canned fruits, preserves and vegetables. They may be seen hovering over fruit bowls, although they are sometimes attracted to excreta, and some species breed in human excrement.

The lesser house fly is similar in appearance to the common house fly, but smaller in size. It breeds in different kinds of excreta and is just as dangerous a disease carrier as the common house fly.

From the above it will be seen that flies are a serious menace to mankind, and it is hoped that this article will at least lead the way toward greater public effort in opposing this pest.

# A Civil War Heroine

AT THE ambitious age of 89, the young lady took up typing. Biography does not record the number of words she could write per minute, but those familiar with the methods of Clara Barton will know that she would never desert the typewriter keys or other pursuits until she had mastered them.

The Clara Barton of Civil War battlefields, whose name is among the most cherished in nursing history, started life with two handicaps—one of name, one of emotions. Both, she overcame.

*Clara Barton, at eighteen*

Born as a Christmas gift to Capt. and Mrs. Stephen Barton of Oxford, Mass., in 1821, she was christened Clarissa Harlowe Barton. Clarissa Harlowe, it must be explained, was a heroine of eighteenth century fiction, and her sorrows and sufferings at the hands of her profligate lover, Lovelace, ran through eight bulky volumes, each more sentimental and agonizing than its predecessor. On maturity, Miss Barton abandoned the name with its romatic associations and became plain substantial Clara Barton.

The second handicap of the child, Clara Barton, was fear—blind, unreasoning terror. Of her early childhood she once wrote: "I remember nothing—but fear!" But she had overcome or forgotten fear, when forty years later amid musket and cannon fire she bore aid to wounded and dying soldiers.

### *Friend of Many Presidents*

This woman who was to know personally every president from Lincoln to Roosevelt, who was to be received over all Europe by those of high rank, who was to found the American Red Cross, and who was to receive more honor at home and abroad than any American woman had ever received during her lifetime, was a precocious youngster.

Coming from a family of school teachers—her father and four older sisters and brothers being teachers—Clara had early educational advantages. At three, she could read; at four she was in school.

"Spell this word," said the teacher to her youngest pupil. The teacher pointed to "cat."

"Please, I don't spell there," said Clara.

"Where do you spell then?"

"I spell in 'artichoke,'" Clara replied, that being the leading word in the three syllable column of her speller.

And so she was put in the "artichoke" class.

One other incident of Clara's childhood is significant. While in the farmyard one day, she happened to see an ox being killed. So horror-stricken was she by the sight, that she rarely ate meat at any time during her life. The only thing which saved her from being an absolute vegetarian was her desire not to offend. When she sat at a table where meat was served and a refusal to eat it would involve an explanation embarrassing to her host and hostess, she did eat of it sparingly.

"What grows out of the ground is good enough for me," she frequently said in reference to her vegetarian diet.

It was natural that coming from a family of teachers, Clara should herself enter that profession. At any rate, in those days, there was little else for a young woman to do who wished to be independent of others for her support. For twenty years or more, she was a teacher and had the distinction of establishing the first free school in the New Jersey community where she labored. When in 1854 she had to give up teaching because her voice failed her, she went to Washington, D. C., and applied for a clerkship in the U. S. Patent Office.

For her work there she received $1,400 a year and was one of the first women ever appointed to a regular position in one of the departments with work and wages equal to that of a man's.

### *Reads in Senate Chamber*

"If one had been privileged to visit the Senate chamber of the United States in three days after the assault on the Massachusetts troops in April, 1861, the first blood that was shed in the Civil War, he might have beheld an interesting sight," says her biographer and kinsman, the Rev. William E. Barton.

"Behind the desk of the president of the Senate stood a little woman reading to the Massachusetts soldiers who were quartered there. Washington had need of these troops.

Had they and their comrades arrived a few days later, the capital would have been in the hands of the Confederates."

This, then, was Clara Barton's earliest contact with the Union soldiers. As the war advanced, she was appalled by two things—the stories she heard of suffering on the part of the wounded before they could be conveyed to hospitals, and the almost total lack of supplies for their care.

She thought of the good clean cloth in New England homes that might be used for bandages and of the fruits and jellies in country houses which convalescent soldiers would enjoy. She began advertising for these things in the Worcester newspapers and met such immediate response that she set up a distributing agency for supplies.

From this small beginning grew her work of organization—her most distinctive contribution to the Civil War—which assured the prompt conveyance of relief to the place of greatest need and greatest danger in the field of battle.

It was August, 1862, before Clara Barton finally succeeded in getting permission to go to the front and set out with her truck of supplies for Fredericksburg. Then began her service among the wounded on the battlefields, for Miss Barton's work was never inside the hospitals but with the men before they could be taken to these institutions.

### *Followed the Cannon*

Her motto was "Follow the cannon," for she soon learned that if she was ever to get to a battle front in time to be of immediate service, she must short-circuit the ordinary military method which would have put her and her equipment among the baggage wagons. And so she followed the cannon, and tended soldiers before the smoke of battle had cleared; indeed while the cannon shells were bursting about her. Here she won for herself the title, "Angel of the Battlefields."

The war over, Clara Barton inaugurated a service for tracing missing men, and thousands of families were informed that husbands and sons, for whom all hope had been abandoned, were alive and convalescent. Frequently, also, she brought back to local attention some soldier who wanted to lose his identity and thus ruined his plans for starting life again in a new town or with a new wife.

### *Plead 18 Years for Red Cross*

Broken down in health, Miss Barton four years after the war had ended, went to Europe and there she heard first of the Red Cross.

"From 1863, when the Red Cross movement began in Geneva, Switzerland," writes one of her biographers, "until May of 1881, when James G. Blaine wrote to Clara Barton that President Garfield would recommend to Congress the adoption of the international Red Cross treaty, was a period of eighteen years during which time the United States turned a deaf ear to every entreaty to participate in the work of the Red Cross.

"That the United States even at that late date came to be a participant in the results of the Geneva convention was due chiefly to the untiring faith, devotion and perseverance of Clara Barton."

### *Active for Ninety Years*

Clara Barton died shortly after her ninetieth birthday, active until her last year. It was only the summer before that she had learned to typewrite. She had that year salted down eggs, done her own cooking and learned to graft trees.

At the close of her funeral service in Oxford, Mass., where friends of many states and countries paid her honor, a woman stepped up to the minister and whispered:

"My little girl was born in Clara Barton's birthplace; in the very room where she was born. Will you baptize her, and will you do it now?"

"Bring her to me," said the minister, Dr. William E. Barton, "and I will christen her Clara Barton."

# Plain Facts about Health and Disease

## ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION

THE Annual Session of the American Medical Association will be held in Chicago, June 9-13. At this session, approximately 10,000 physicians will be in attendance. The Association has retained the entire north second tier of the Municipal Pier in Chicago, shown on the cover page of this issue of HYGEIA. This space has been subdivided into eight lecture halls in which will be held the various sectional meetings devoted to the medical specialties, such as surgery, obstetrics, diseases of the eye, ear, nose and throat, and similar subjects.

In addition, there will be extensive exhibits illustrating the progress of medical science, and about one-half the space will be occupied by a complete demonstration of all of the accessories used in the practice of medicine, from the simplest device for listening to the heart to the most complete x-ray equipment, delivering 250,000 volts, used in the treatment of cancer. As a part of the educational function of this session, diagnostic clinics, in which physicians will receive special instruction in modern methods of diagnosing human disease, will be held during the first two days.

The average man little realizes the intimate relationship of the holding of such conventions to his personal health. Here the family physician comes to acquire, at first hand, knowledge concerning advanced methods in the detection and cure of disease. Here he learns of new devices for aiding his own senses and methods for the relief of pain and other disagreeable symptoms. Here he conveys to other doctors the results of his own experience during the past year.

At the scientific meetings more than 300 papers will be read and freely discussed, enabling the listener to determine for himself the worthiness of theories and advanced conceptions. The physician that attends the session does so at a considerable sacrifice to himself in time and money in order that he may acquire knowledge that will be of benefit to his patients and his community. It is hoped that those at home will bear gently with his absence in the realization that he will return with increased energy and new information.

M. F.

## HEALTH NEWS OF THE MONTH

**Foot and Mouth Disease**

During the months of March and April an outbreak of foot and mouth disease occurred in certain parts of California. In an endeavor to cope with the outbreak, health authorities were compelled to enforce regulations that interfered seriously with travel and particularly with the shipment of foodstuffs in the affected district.

Foot and mouth disease is an acute, highly contagious condition that affects animals severely, but is rarely contracted by human beings. The typical symptom is an eruption of small blisters, chiefly on the membranes of the mouth and on the skin at the cleft of the hoof in cattle or sheep. The eruption sometimes spreads to other parts of the animal's body. Following infection, the animal tends to waste away and may die of the condition, although the disease is not generally fatal in cattle.

The chief method used in preventing the spread of the disease, however, is usually the destruction of the involved animals, so that outbreaks may result in considerable financial loss. The cause of this disease has not been found, but evidence is available that it is passed from one animal to another in the material which is found in the blisters and also in the saliva and milk of the infected animals.

**New Cures and Methods**

Numerous inquiries have been received at the headquarters of the American Medical Association during the past month relative to two alleged cures for cancer extensively considered in the newspapers. The first of these was a serum supposed to have been discovered by one Dr. Scott. The newspapers carried announcements that Dr. Scott's serum had been reported to the American Medical Association. An extensive survey of the scientific literature on cancer fails to reveal any scientific article by Dr. Scott. Neither have any announcements been received in the office of the American Medical Association.

The other serum was supposed to have been reported by Dr. Fichera of Italy. For more than ten years, the scientific contributions of Dr. Fichera on the subject of cancer have been

appearing in medical publications. The evidence has been considered of interest, but so far as we know, there is not yet any warrant for the belief that Dr. Fichera has been successful in elaborating a curative serum for cancer.

Hardly a week passes but what some new method of treating cancer is welcomed as the achievement of a long sought goal. Some day perhaps the world will be happily surprised by an announcement concerning a method as well substantiated as the insulin treatment for diabetes or the use of salvarsan in syphilis. But it will have to be at least that well substantiated to receive the credence of scientists.

During the session of the American Chemical Society in Washington, D. C., a paper was read by one "Dr." W. J. A. Bailey, who was designated as director of the American Endocrine Laboratories in New York. Mr. Bailey had much to say on the relation of the glands to the functions of the human body, and reiterated the old newspaper sensation that by experiments with these glands, human rejuvenation would be possible.

Among other statements, newspapers reported that Mr. Bailey said: "I am satisfied from definite clinical experience with the radiendocrinator that a method of endocrine ionization is now available whereby we can definitely, practically without exception, retard the progress of senescence and give a new lease of relatively normal functioning power to those whose sun of life is slowly sinking into the purple shadows of that longest night." Careful search fails to show that W. J. A. Bailey is a physician. The "radiendocrinator" is a device hardly likely to be classed by any one with scientific knowledge as more than a piece of pseudo-scientific buncombe.

Some time ago the *Journal* of the American Medical Association called attention to the exploitation of a fat cure called "citrophan" by a Dr. Herman H. Rubin. It appears that Dr. Rubin has published a book puffing the "radiendocrinator." This book is being used as an advertising asset by the concern that is exploiting the device—which costs $1,000. This, it seems, is a gold covered device three eighths of an inch thick and 2 by 3 inches in size. It is to be worn over the "endocrine glands while sleeping." Since the endocrine glands are distributed throughout the body, from the brain to at least the lower part of the abdomen, one wonders how the device is manipulated to cover all of them. Not the slightest scientific evidence is available to support any of the claims made for the radiendocrinator. M. F.

## DISEASE TRANSMISSION—THE MOST CERTAIN ROUTES

OF THE thirty-six to forty diseases which are known to be spread from one person to another, six are transmitted by insects. The remainder, including all of the more common diseases, gain entrance to the bodies of their victims almost invariably through the mouth and nose.

Germs of these diseases are carried by the spray from the mouth and nose emitted by one afflicted with an infectious disease, by a carrier of such germs in coughing, sneezing, forced breathing or loud speaking, by articles of drink or food, or by drinking and eating utensils. Another frequent avenue of infection is the roller towel, or any towel used by more than one person.

Practical application of this knowledge has been made in many states in the abolition by law of the common drinking cup and the roller towel; for these are substituted the drinking fountain, individual paper cups and paper towels. Dishwashing machines that sterilize by thorough boiling all eating and drinking utensils, the purification of water and food supplies, and the education of the public as to the dangers of unguarded spitting, coughing, and sneezing, are other means by which the spread of communicable disease is being greatly lessened.

It cannot be too strongly and constantly emphasized that those avenues of transmission that are most direct are the most dangerous. Kissing, the common drinking cup, and the roller, or common, towel are all taboo, and as certain conveyers of contagion as would be a community toothbrush. J. M. D.

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## BOBBED HAIR

JUDGING by the amount of space given to the discussions in the lay press, the hygienic aspects of the bobbing of hair constitute one of the major health interests of the public. These discussions have been participated in, unfortunately, chiefly by tonsorial artists—professors of hirsutology—rather than by scientists who have actual knowledge of the anatomy and physiology of the hair.

HYGEIA has stated repeatedly that cutting the hair does not harm it. Neither is it necessary to singe the ends, for the hair has no sap running in its center. Singeing merely substitutes a blunt fused end for a straight cut one. There is a bare possibility that rubbing of the neck in the region where the hair has been cut may produce a slightly increased tendency to

the development of pimples or even boils, for it is well known that men that suffer with boils in the region of the neck sometimes have an outbreak due to the rubbing of a hair follicle by the collar. The point rubbed becomes a spot on which bacteria may enter more easily, and bacteria are always present in the skin.

Many women are no doubt familiar with outbreaks of boils due to shaving the hair too closely under the arms. It seems reasonable to state, therefore, that from hygienic points of view, there can be little or no objection to trimming the hair in accord with modern styles.

The social and economic aspects of the matter may involve other considerations. It is understood that the upkeep of the modern bobbed head is approximately $2, and in some cases as high as $4, per week, if it is to be kept in model condition. Again, there are conservative persons who object, from an aesthetic point of view to the end results, at least in some cases. The eye fortunately becomes used in time to almost any scene.

Were we to lapse into philosophy we might venture allusions to the fact that most modern feminine innovations are first made apparent to the public by members of the demimonde. The short skirt, the smoking of cigarets, the use of rouge, the lipstick and the eye-brow pencil as well as other novelties in feminine adornment and habits were thus first perpetrated on an unsuspecting world. No doubt the revolt against bobbed hair arises in the natural conservatism and puritanism of that element of the community which revolts against novelties arising from such a source, regardless of their value.

M. F.

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## A HOLIDAY GUARANTEE

IN FEW events is there the thrill of anticipation that accompanies plans for a summer vacation. Built, as they are, on the enchanting vistas and phrases of railway folders, resort bulletins, automobile guides, steamship literature, sporting goods catalogs or the testimony of friends, holiday plans are sometimes less profitable in realization than in prospect.

But the wise vacationist will reflect as he swats mosquitoes, eats untempting food or swelters in a sleeping car that, in retrospect as in anticipation, only the pleasures and excitements of the period remain.

Weeks of planning and weeks of saving all are well spent if the worker can come back to his task with quieted nerves, hardened muscles and a new zest for his job. How can he be assured of such returns from his holidays?

From the teacher or capitalist with a vacation period reckoned in months to the typist and factory hand with a mere week or two of leisure, there is a universal guarantee of a happy and healthful holiday. It is not written in terms of mountains or seashore, ocean travel or motoring, tourist camps or discriminating hotels. It is not costly and need not be exclusive; indeed it is available to every one without extra charge.

The recipe for a happy, healthy holiday is: Spend it out of doors! This need not mean sleeping out of doors; nor does it mean eating out of doors. But the more time that can be spent in wholesome—not overstrenuous—exercise and in rest, outside of the strange shelters built by man, the more profitable will be the vacation.

M. W.

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## OUTGROWING DISEASE

IN THE *Journal* of the American Medical Association appears the last contribution to scientific medicine of Dr. L. Emmett Holt, noted pediatrician, who died in Peking, China, a few months ago. In his discussion he dealt with that "last refuge of the unsuccessful physician and last hope of the discouraged mother," the belief that the child will outgrow disease. Most often the condition referred to is one that does not involve any actual physical change in the body structure, and such conditions are actually frequently outgrown. Further, in some instances chronic conditions that are caused by actual changes in the body structure may be repaired through growth.

"Growth," Dr. Holt points out, "really constitutes a reserve capacity for repair in the different organs that is of great value in effacing the effects of disease."

Normally, the body doubles in weight and particularly in size in the first six months of life; by the end of the third year, it has doubled again; at about 10 years it has doubled for the third time, and usually by the time 16 or 17 years is reached, it has doubled in weight for the fourth time. The body of a grown person is thus approximately sixteen times the size that it was at birth, and twice that at the age of 10 years. It is known also that not all of the organs of the body grow at the same rate. Some, such as the brain and the liver, reach their full development much earlier than others. Renewal and repair of body cells go on constantly and most actively during the period of youth and growth.

Dr. Holt called attention particularly in his last scientific paper to certain deformities of

childhood that may disappear as the result of normal growth. For example, great deformities of the chest, such as are seen following rickets, may disappear with the normal growth of the lungs. Deformities of the bones of the legs, such as knock knees and bowed legs, tend to straighten unless there are mechanical or physical conditions present to prevent such growth, for it is the tendency of long bones to grow straight rather than crooked. He considered particularly encouraging the frequency with which complete recovery may follow inflammations of the kidney, as for instance those which follow scarlet fever and other infectious diseases. Then, too, patients with heart disease during early life frequently recover following carefully graded and supervised exercises and the proper amount of rest.

Certain conditions which affect infants tend to disappear as the child grows older. For example, the child has a large abdomen because there are many conditions that predispose to dilatation of the stomach and the intestines in small children which do not obtain in those who are older. The improvement that may take place in the child suffering from such conditions seems absolutely unbelievable to those whose ideas are based on a knowledge of similar conditions as they may affect the adult.

"Provided the proper treatment is secured and the nutrition of the child maintained at its best," said Dr. Holt, "there seems to be almost no limit to which recovery may take place in even the most severe conditions." He indicated that in order to secure the maximum benefit that might be furnished by growth, the child should have proper exercises to develop the lungs in cases of deformities of the chest, prolonged rest for acute attacks in heart disease, intelligent feeding, abdominal support and relief of constipation in cases in which the bowels were dilated, and most important of all, the closest attention given to the proper feeding and assimilation of food throughout the entire period of growth.

M. F.

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## THE LICENSING OF PHYSICIANS

THE American Medical Association has just issued its records of the licensing of physicians in the United States during 1923. It will be remembered that during the past year, diploma selling and license selling in Connecticut and Missouri, revealed first through an exposé by the *St. Louis Star*, stirred the country into unwonted activity in the detection of medical impostors.

A résumé of the facts now published reveals that in general the public is well protected against illiterate and unqualified physicians. However, the laws in Massachusetts, Wyoming and the District of Columbia do not give the state licensing boards needed authority. Moreover, Arkansas and Connecticut, plague spots through the licensing of poorly qualified men by their eclectic boards, continue to divide authority among several licensing boards.

In Arkansas, 176 graduates of low grade colleges have secured licenses through the eclectic boards during the last seven years. Of this number, 166 were graduates of one school, the Kansas City College of Medicine and Surgery. This school, it will be remembered, was one of the two medical schools definitely shown to be connected with the diploma mill ring. During 1923, the eclectic board of Arkansas licensed thirty-six graduates of low grade medical schools.

Another significant feature of the reports just issued by the American Medical Association is the fact, just made apparent, that the United States is having an influx of foreign physicians. While only sixty-five applied for licensure in 1919, there were 371 in 1923. Foreign physicians tend to congregate in the cities, and therefore hardly aid in supplying the deficiency of physicians in rural districts.

The *Journal* of the American Medical Association suggests that the state licensing boards may well require a declaration of intention to secure citizenship of all foreign physicians attempting to practice in the United States. Furthermore, the records of foreign medical schools and the diplomas presented by foreign physicians seem to require unusually careful scrutiny to avoid imposition on the public.

M. F.

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## SMALLPOX IN CANADA

UP TO March 3, over forty cases of smallpox occurred in Windsor, Canada, and there were twelve deaths. Including the surrounding districts, sixty persons were affected, with eighteen deaths. Apparently forty-two of the cases owed their origin definitely to contact with a single undiagnosed case of smallpox.

A mild epidemic of this disease has been present in Detroit since last September. It was, of course, to be expected that some cases would develop in Windsor, which is just across the river, and cases did develop, but they were of a mild character and caused no alarm.

However, during February a man in Windsor died from an irregular type of hemorrhagic smallpox. This man was seen by several physicians during his illness, but his case was not diagnosed properly, so that he was visited by

many friends and relatives, and when death occurred his funeral was largely attended. Cases of smallpox began to occur promptly among those who had come in contact with this man or with his body, and as has been stated, forty-two cases were traced directly to this source of contamination.

The cases which occurred could be divided into three definite groups: mild cases in those who had been successfully vaccinated more than twelve years before, or who had not been vaccinated; severe cases in unvaccinated persons; the hemorrhagic cases, all of which occurred in unvaccinated persons, and all of which were fatal. The unusual appearance of the patients with hemorrhagic smallpox made the diagnosis very difficult, so that some were at first diagnosed as scarlet fever and measles.

Above all things, the epidemic proved the value of vaccination. No one who had been recently successfully vaccinated died of the disease, whereas the deaths among unvaccinated persons suffering from the disease included about 50 per cent. During the last week in February 50,000 persons were vaccinated, and this without a compulsory law. The severity of the disease and the confidence of the people in the local health authorities undoubtedly brought about the extensive desire for vaccination.

M. F.

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## BRITANNIA GUARDS HER CHILDREN

THE new labor government of Great Britain is alive to the interests of the children of the kingdom. The first bill of the new government, introduced by Mr. C. G. Ammon, parliamentary secretary to the Admiralty, has for its general object the consolidation, extension and amendment of the children's acts of 1908 to 1921.

The bill contains many enactments relating to offenses against children under 16. Laws against infanticide are made more stringent, the criminal causation of the death of the unborn being made a felony punishable by penal servitude or by imprisonment without hard labor. All persons undertaking for payment, either direct or indirect, the care and maintenance of orphans or of infants that have been separated from parents or guardians must be carefully selected and supervised by the county or borough council and their selection justified to the minister of health.

Social workers for infant protection must be appointed and these, as well as philanthropic societies providing adequate shelter and succor to children, are required to furnish reports to local authorities. Great liberty of action is given to local authorities in the appointment of visitors, but it is obvious that the advice of medical men will often be necessary in selecting visitors, defining their activities, advising them in regard thereto, and in attending cases of illness among the children.

No person over 16 or under 19 is liable, under the bill, to be kept in penal servitude.

The laws covering sexual offenses against young girls are reenacted with amendments and fresh provision, while boys under 18 are protected from the lascivious actions of women over 18 years of age.

There is no better criterion of the stage of civilization that has been attained by a nation, state or community than is afforded by the treatment it accords its children.

The labor government of Great Britain in this bill gives evidence that it is inspired in its attitude towards the coming generation by a humane spirit and the realization that the future of a nation depends on the sane, kind and considerate treatment of its children. Such a nation is not likely to tolerate the sordid greed of those who compel little children as young as five years old to work in the cranberry marshes, in the beet fields, and in factories and other industries—abuses that are still tolerated in some portions of the United States.

J. M. D.

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## THE PROMISE OF A LONGER LIFE

IN 1909, the National Conservation Commission reported that the average duration of life in India was twenty-five years; in Sweden, over fifty years, and in Massachusetts, forty-five years. Wherever sanitary science and preventive medicine are applied, the average length of life is increasing. In this country the rate of advance for Massachusetts has been about fourteen years a century. In New York City, in 1877, one hundred and five children died out of every thousand children under five years of age. In 1923, only twenty children, out of each thousand under five years of age, died. Health authorities state that the principal factors in this tremendous reduction of mortality have been the control of the infectious diseases of childhood, especially diphtheria, the use of a pure milk supply and the aid in the care of children given by a great number of health agencies, chiefly philanthropic. Thus far, the increase in life expectancy has been almost entirely confined to the ages before thirty-five years. The problem of the future is to lessen mortality after middle age and after the age of sixty. Certainly with increased attention to this problem, much is to be expected in the future.

M. F.

# BOOK REVIEWS

PARENTS AND SEX EDUCATION: By Benjamin C. Gruenberg, Ph.D. The American Social Hygiene Association. New York. 1923.

IN A clearcut, simple way, Dr. Gruenberg presents a much needed contribution to sex education. Although written especially to aid parents, this is a book that should be owned by every teacher.

"Why bother the young child with ideas about sex?" queries one mother. Dr. Gruenberg says the young child would not need to be bothered with such lessons, were it not for two considerations: First, the knowledge regarding sex and reproduction which the child receives will be permanently colored by the manner and circumstances of his impressions. Second, unless a child is completely isolated from contact with other persons, or unless he is subnormal, sex information is sure to come to him from a variety of sources.

Instruction is easiest during the earlier years, to satisfy legitimate curiosity which cannot be safely ignored, and to keep open the channel of confidence and communication between the parents and child, guidance should begin early.

The author takes the right attitude toward a child's questions about sex. He says: "Matter of fact statements should be stated in a matter of fact manner. . . . There is no occasion for a whisper, for twilight, or for sentimentalism, any more than in the teaching of table manners or geography. Any genuine sentiment that the parent may feel and earnestness derived from sincere conviction on the subject will assert themselves without needing help from artificial impressiveness or dramatic setting."

The sex impulse is neither "good" nor "bad." It is simply one of many impulses that help to make personality and character. It can cause much unhappiness, or it can help to enrich our lives. What the result will be depends on how the impulse is directed, educated, and used. J. P.

POISON MYSTERIES IN HISTORY, ROMANCE AND CRIME. By C. J. S. Thomson, M.B.E., author of "The History and Romance of Alchemy and Pharmacy." Price $3.50. J. B. Lippincott Co., Philadelphia.

THIS fascinating book has, as its publishers declare in their announcement, "the essence of a hundred mystery stories, the plots of a hundred dramas," but one might add that some of them are already public property.

The book is written from an historical rather than a scientific viewpoint, and although the author has tried to analyze the ingredients of the various famous poisons that he describes, many of his recipes are based wholly on probabilities and on very little accurate data.

No one knows today, for instance, just what sort of poison was used by the Borgias, and although Cesare Borgia is supposed to have carried it in the receptacle in a hollow ring, no traces of it has been found. Mr. Thompson's conjecture is that the Borgias used arsenic, for the reason that it was commonly used in Italy in that period. The secret is said to have been in the hands of the family until the middle of the nineteenth century when it was burned in Paris by the last survivor, the Duke of Riaro-Sforza.

The author gives all the current stories of the death of Pope Alexander VI, the most popular of which is that he was poisoned by candy and that his son Cesare was poisoned, but not killed, at the same time, but finally leans to the explanation that the pope probably died of a virulent fever.

So general was poisoning in the middle ages that when a physician was unable to diagnose a disease, and was puzzled by the patient's death, he generally thought it the result of a slow poison, and this was commonly credited.

Machiavelli was popularly supposed to have died of a poison, but happily the composition of the pills he took has survived, and Mr. Thompson declares that the pills were a strong purgative taken in the dose prescribed and that Machiavelli, in a weakened condition, may have taken an overdose of them and so hastened his end.

An interesting story like that of the death of Elisabeth Sirani, who was said to have died of some sort of corrosive poison, becomes less alarming when one learns from the symptoms that it was probably peritonitis.

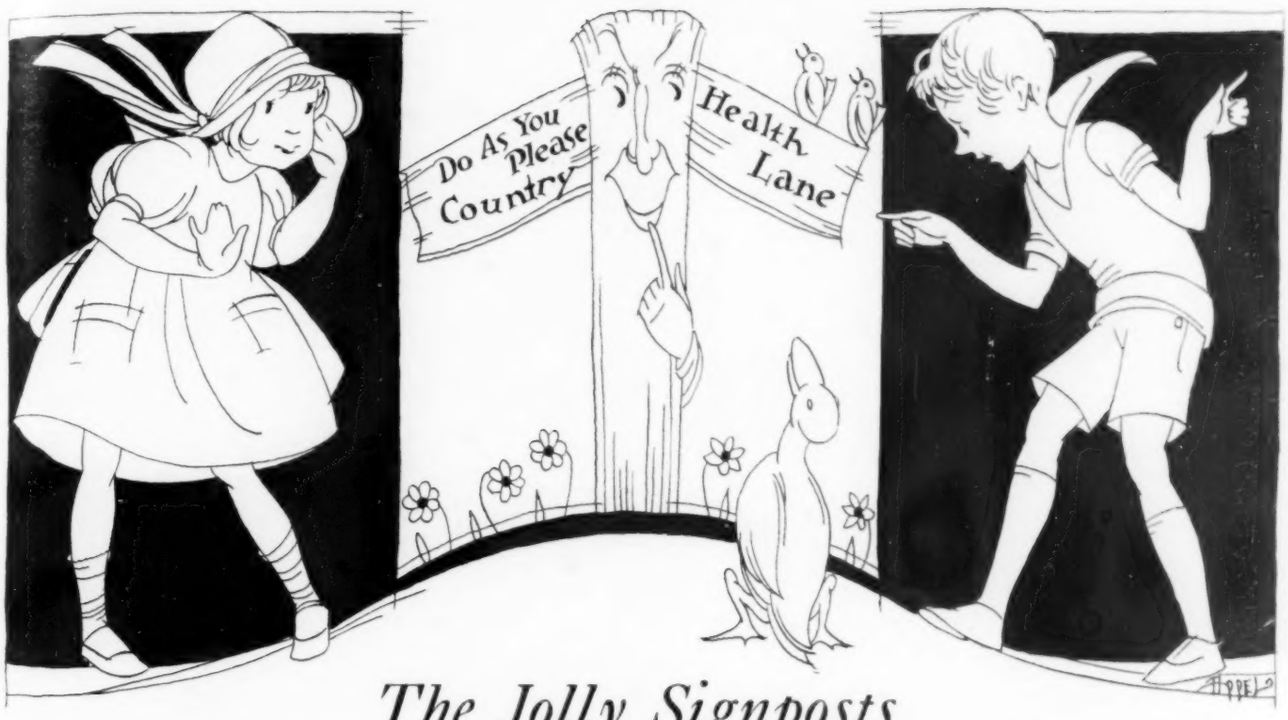
The author's conclusions are interesting. "From this study of some of the more famous poison trials of the past hundred years," he writes, "it is clearly demonstrated that the toxicologist and scientific chemist are the most formidable enemies of the criminal poisoner. It may be safely said that the days have gone by when a person could administer a poison with intent to kill without much fear of detection. The criminal poisoner, like other murderers, generally leaves some indelible traces that eventually prove his guilt. Such traces, as instanced in many cases, remain detectable even after the lapse of years." H. H.

THE MOTHERCRAFT MANUAL. By Mary L. Read, B.S. Price $2. Little, Brown & Co., Boston.

MOTHERHOOD is one thing; mothercraft something entirely different. Many persons have tried to make the inefficient woman who has achieved motherhood, but not mothercraft, responsible for the wilfulness of the younger generation, and no doubt a case can be made out by them. But this mothercraft is something distinctive.

Charlotte V. Gulick, who writes an introduction for this competent book begins with the statement that: "Seventy-five per cent. of the women of America are married and most of these have children." This is an encouraging observation, and so is her statement that: "Motherhood offers no less opportunities for success than do the professions of law or medicine." When any mother has mastered this book, she will be much better able to take charge of a family and rear little children with regard for their health, comfort and mental development; moreover, the book will be of great value as a reference work, in which mothers can find discussed the especial problem that defeats them.

The book goes beyond the care and feeding of infants; it takes up games and schooling, the toy age, nursing and the nursery, studies in school and their relation to the child mind, and gives most comprehensive tables for feeding and teaching the child, curriculum, and bibliography. The most comprehensive and competent book of the kind that we have examined. H. H.




# The Jolly Signposts

HARRIET WEDGWOOD

ONCE upon a time a girl named Betsey-bobbit and a boy named Oliver set off for a walk down the road. In fact, they set out on a journey. What they were journeying for they did not know; but then, this was an adventure, so that did not matter. The Cuckoo-in-the-Clock had told Betsey-bobbit about a Jolly Signpost down the road a way: and a Little-old-Man-in-a-Dream had told Oliver the adventure was worth while, but warned him to have a good bath and eat a good breakfast before he started. This both children did, and then set off together.

There was no mistaking the Jolly Signpost when they came to it. He had a painted head and a painted smile; but he winked his eye and waggled his finger and talked through his painted smile.

Oliver addressed him politely: "Which way shall we go now?"

"Over there's Do-as-you-Please Country," waggling a finger toward Oliver's left, "but you won't have half as much fun as if you go the other way. Try Health Lane." And he waggled his whole hand toward a narrow lane at Oliver's right.

"Shall we go?" said Oliver to Betsey-bobbit, and Betsey-bobbit said "Let's." So they went that way.

The road was narrow and not smooth; but they went on till they came to a second Signpost—a Tin Soldier with painted moustaches curled up at the corners of his mouth, and a musket at "shoulder arms."

"This is a very narrow lane," said Betsey-bobbit to the Jolly Signpost. "Must we stick to the path?"

"Better," said the Tin Soldier. "There are mires and pitfalls just off the path that you can't see."

"We can do as we please, I suppose," said Oliver with a smile.

"Do you *want to?*" demanded the Tin Soldier.

"Sure we do," cried both children in one breath, "sure we do." (Which was not quite grammatical, was it? They *should* have said "surely," but they didn't.)

The Tin Soldier set down his gun with a thud; spun round and round excitedly on his wooden pin. But he stopped at length and said quite calmly, but quite seriously too:

"Heaps more fun being a good soldier, just *heaps* more fun. Besides there are some curious things down the road you have not seen. Better keep on."

"Shall we?" asked Oliver of Betsey-bobbit, and she said "Let's"; so they kept on.

After a little they came to the next one of the Jolly Signposts, and what do you think it was? A Wooden Girl pumping water from a wooden pump. You would hardly have known it was one of the Jolly Signposts if she hadn't called out to them:

Have some water.
Best thing in the world to drink.
Everybody ought to drink six glasses a day.
Have some water. Have some water.

"Shall we?" said Oliver, and Betsey-bobbit said "Let's. But where are the cups?"

"There's a Morning Glory vine just behind. Are you blind? Every flower makes a cup—you can sup—pick it up, pick it up," said the Wooden Girl, pumping as she talked.

So Oliver picked a pink flower and Betsey-bobbit a blue one. When they held them under the pump they changed to full sized goblets, one pink and one blue. Each child drank a full glass of water and said it was good.

Nothing better,
Nothing wetter,

said the Girl, with a laugh that sounded like the gurgle of a brook.

"I like the Jolly Signposts," said Betsey-bobbit to Oliver.

"You'll laugh when you see the next one," said the Wooden Girl, still pumping away.

Then they trudged along, refreshed by the drink of water, but beginning to get hungry nevertheless.

"Let's ask the next Jolly Signpost where we can get something to eat," said Betsey-bobbit, and Oliver thought it a good plan.

You never in the world could guess what the next Signpost was like; I could not myself if I had not been told. It was a little wooden Jersey Cow, for all the world like a real cow,

only very tiny, and perched on a wooden platform on a post. Beside the little Cow stood a Dutch Dairy Maid, *clean* as CLEAN, with a wooden yoke on her shoulders and two buckets dangling from the ends of the yoke.

"This way, Children," called the Dutch Dairy Maid, "milk fresh from the Cow." She sat down on a tiny milking stool and milked fresh sweet milk into one of the buckets. From the other she took mugs, and bread and butter sandwiches and fresh fruits.

Now Betsey-bobbit had a sweet tooth and ate far too much candy. She went up to the Dutch Dairy Maid and whispered in her ear. The Dairy Maid began to spin about, till her buckets stood straight out from the yoke, but at last she stopped and said:

This is Health Lane
(I thought that was plain).
Milk and fruits you'll find right handy;
But we don't sell any candy.

The children laughed, for the Dairy Maid did look *so* funny. Then they sat on the warm grass and ate bread and butter, and apples and oranges, and drank the milk. All were very good indeed.

"I'll fetch you some milk for your oatmeal in the morning," said the Dairy Maid. "You'll find that is good, too. This is Health Lane. Now keep right on to the next Signpost. It isn't far."

So they kept on going, Oliver and Betsey-bobbit, till they came to a sleepy little dell, where even the chirp of the cricket made you want to go to sleep. They tried not to be sleepy; neither of them liked to sleep by day—and little enough by night!

"I'm *so* sleepy," said Betsey-bobbit, "but I will not be seen sleeping by day."

"Why not," said a voice, "why not?"

The children looked up. The voice had come from another of the Jolly Signposts—a stone

post with a funny face and with long arms that he kept folded. He was wearing a big-brimmed hat which threw a shade, like an umbrella, over a long stone bench piled with cushions.

"Why not have a nap by day? Everybody should rest during the day, and always after eating. If he can sleep, so much the better."

He beckoned to them with one long finger and smiled a sleepy sort of smile. The children felt sleepier and sleepier, so they came to the bench and curled up on the cushions.

"That's right," said the Signpost. "This is Health Lane. It leads to the Healthway—and a lovely broad road it is to travel in. You'll be more likely to reach it if you sleep a little."

The children hardly heard him; and when the Wood Peewee overhead sang "Slee-py; slee-py; *so* slee-py," they were fast asleep.

Oh, but they felt fine when they waked.

"What *does* make me feel so well?" asked Betsey-bobbit.

"Let *me* tell you," said the Jolly Signpost. "You are in Health Lane, for one thing. You are out of doors, in the sun and air. You began the day right, with a good bath and a good breakfast; you drank good water between meals, you ate good foods for your lunch—milk and bread and butter and fruits; you are on the right path and going the right way. And what's more, you had a good sleep! Why shouldn't you feel fine and happy?"

"I'll remember those things," said Oliver, thoughtfully.

"Do," said the Jolly Signpost, "do. And while you're remembering, just remember to eat vegetables—learn to like them, *all of them;* and don't forget to take plenty of baths and sleep plenty of hours at night."

"We will remember" cried both children; for they felt so well now they knew they *could* remember all they were told. It is *so much* easier to remember when you feel fine.

"Now keep right on," said the Jolly Signpost. "Rest time's over."

With that he pulled a string which rolled up his wide hat brim into a fat turban round his head.

"Jolly, isn't it?" said he.

You couldn't have helped laughing yourself if you had seen it.

Betsey-bobbit and Oliver went on down Health Lane till they came to a fine broad road.

"I expect this is the Healthway," said Betsey-bobbit. "I've heard of a Speedway and a Broadway, but never of a Healthway before."

"You shall hear of it now, then," said a voice close beside them.

Betsey-bobbit looked up and saw on the lower limb of a small tree a Brown Owl, with big yellow eyes which winked slowly and solemnly.

"I will tell you about the Healthway," said the Owl. "And, by the way, you should say 'suspect,' not 'expect.' Didn't you learn that in school? But about the Healthway. It's a fine big road that's a joy to travel once you get on it; and if you have sense enough to keep on it. So many people try short cuts to get here and there. I don't advise it."

"Why not?" asked Oliver.

"The short cuts don't get you anywhere. Even if you get the one thing you went after, you'll find you've missed too many things you wanted just about as much. You can't get them unless you keep on the Healthway."

"Are you a Jolly Signpost, too?" asked Oliver.

"Why, to be sure," said the Owl. "You missed me didn't you? Well, you will miss one now and then, and that's all right provided you get on the Healthway; and don't forget to stay on it."

"How does anybody know all those things?" asked Oliver, who was just a bit doubtful.

"One learns," said the Owl. "Wait a minute."

He hooted three times. An automobile horn somewhere out of sight honked three times in answer,

and a machine was heard coming along the road.

The children were not prepared, however, for what they saw: a wee little automobile of green and gray, sleek and shiny, the cunningest thing you ever did see; and in it a Grinning Elf.

"I like your auto," said Betsey-bobbit.

"And I like yours," said the Elf.

"But I haven't any," said Betsey-bobbit.

"Oh, yes you have; an auto's a thing that runs of itself; your body's an auto," replied the Elf.

"How funny," said Betsey-bobbit.

"True, all the same," said Oliver.

"Ever really try to learn how to run yours?" asked the Elf of Oliver.

"Why, not exactly," admitted Oliver.

Would you like to run your auto as you ought to?
asked the Elf;
There are teachers who will teach you how to run it
*by yourself!*

"Just what do you mean by that?" asked Oliver.

"Come with me," said the Elf. He hopped out of the machine and led them to where a beautiful bronze statue stood beside the Healthway.

"That is a Greek statue," said Betsey-bobbit. "There's one like it, in marble, at our school."

"He was an athlete," said the Elf. "That's a wonderful body, isn't it! Now he had a *wonderful machine.* And he *learned how to run it.*"

"How may we learn?" asked Oliver.

"There are Four Masters, who live right at the beginning of the Healthway, and they will teach you, if you go to them and ask them. The Master of Health Habits, the Master of Work, the Master of Play, and the Master of Right Thinking. You will like them, too."

"Shall we go to them, and travel on the Healthway?" asked Oliver, very seriously, of Betsey-bobbit.

Betsey-bobbit hesitated a minute, then said "Let's. I believe it will be the most fun we ever have had."

Then the Bronze Athlete straightened up and waved an arm.

"That's the way to do it," said he, "that's *how I learned.*"

"Well, will you just look at that," cried Betsey-bobbit in astonishment. "He's just another of the Jolly Signposts."

And so he was.

And this is the story of how One Nice Boy and One Nice Girl got started right on the Healthway. They are traveling it still and finding it the most fun they ever have had.

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# *The Story of a Tooth*

YOU have picked up a human tooth in a dentist's office or elsewhere, and noticed how hard and solid its crown is. How do you imagine it came to be that way? Do you think a mass of substances collected in the gum and hardened—forming a solid lump? That is not the case at all. The tooth grew in just the opposite way that a rosebud grows and blooms.

The rose is first a closely-packed bud. If you ever pressed a new rosebud between your fingers you know how firm it is. As it grows the layers begin to spread apart. Press a big rosebud that is almost ready to bloom, and see how easily its parts separate. It is no longer a tight pack. The rain and dew seep inside it. The petals of the rose begin to stand apart.

A tooth starts to form with thin layers that are separated. Instead of their spreading farther and farther as the rose petals do they press closer and closer together, packing themselves, one might say, into a solid bud. If all goes well there is not a crack or crevice left whereby any fluid may leak into the tooth, so perfectly have the layers folded together. A leak too small for the eye to see is large enough for acids to seep into the tooth, and so make way for germs that begin decay. That may have been the case with the very tooth you picked up. If the nerve of a tooth dies before its roots are well formed, they do not develop well.

Do you know that the crown of a tooth may have leaks in it because the blood did not carry the right tooth substance when it was being formed? What the blood carries depends upon the diet.

Do you know that milk has in it a very important substance for the growing tooth? It is lime.

BELVA CUZZORT

# HEALTH NEWS AND VIEWS

## PARIS CHILDREN ENFORCE OWN HEALTH REGULATIONS

Students, not teachers, enforce the health regulations in seventy-three schools in Paris, under a plan inaugurated by the Hygiène par l'exemple, a society founded two years ago.

The health policemen in the schools are elected by secret ballot by the students from among their own classmates. Four supervisors of health duties are elected every term, and each serves one week out of every four.

Children are required to keep their faces and hands clean and their teeth brushed. The pupils themselves polish the waxed floors and whitewash or calcimine the walls when they need it. For every infraction of a regulation—there are seventeen such—there is a penalty, and the student supervisors see to it that the penalty is meted out.

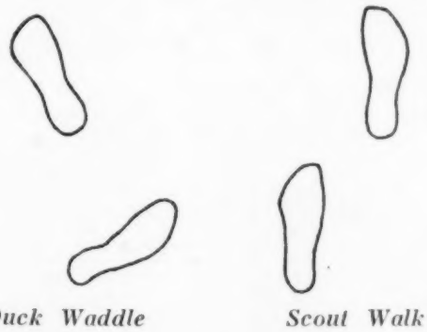
The society Hygiène par l'exemple not only teaches pupils to avoid contagion by cleanly habits, but also watches over the development of the body by exercise and by life in the open.

It is urging the establishment of open air schools, and, where these are not practical, it attempts to establish schools in which the windows on one side of the room are kept open, summer and winter. Difficulty has been experienced in converting the teachers to such a practice because most of them believe drafts very dangerous. However, where these methods have been given a trial, the teachers are said to be enthusiastic over results.

## DUCK WADDLE OR SCOUT WALK?

Women students in physical education at the University of Oregon recently turned sidewalk artists and traced on the cement the right and wrong foot positions in walking, so that pedestrians might be reminded not "to toe out like a duck."

Shoe stores in Eugene and Portland were given opportunity to send shoes to a university exhibit, and these were classified by the senior students, under



*Duck Waddle* *Scout Walk*

the direction of the corrective department, as excellent, good and fair. Each shoe bore the name and address of the dealer, the different styles in which it was made, the price and its rating. A list of ratings was made and permanently posted on the campus bulletin boards.

The shoe exhibit was only a small part of the events of Posture Day at the university, during which the girls in a dozen original ways brought students and townspeople to think of their posture.

## MAKING CHILDREN PHYSICALLY FIT FOR FIRST GRADE

For children who are to enter school for the first time next autumn, the state of California, through its bureau of child hygiene of the state board of health, has just concluded a month of physical examinations.

Qualified physicians, dentists and nurses in almost every county in the state conducted these examinations during the period between April 15 and May 15. Special effort was made to reach children of the rural districts. All examinations were free.

If the children were found to have defective teeth or diseased tonsils, to be undernourished or to be suffering from any other of the common defects that hinder school progress, their parents were informed so that they might take steps to correct the conditions before the children entered school.

A physically handicapped child cannot be properly educated, the bureau of child hygiene believes, and to make a good start in school may be an important factor in determining the child's progress throughout his entire school life.

## SEEK BETTER LIGHTING FACILITIES FOR FACTORY WORKERS

To obtain better lighting in factories and industrial plants, a two-year investigation is to be carried on by the National Research Council committee on industrial lighting, it is announced. Thomas A. Edison will be honorary chairman of the committee.

With better lighting facilities, it is believed that factories can turn out more products, that fewer products will be rejected, and that working conditions will be much better and fatigue less. Part of the plan calls for an educational campaign urging better lighting.

Test installations will be made in a number of large manufacturing plants, such as boot and shoe factories, textile, printing, clothing manufacturing and other industries.

## DUCKS ARE BOMB VICTIMS

Hundreds of ducks were victims of recent army practice in phosphorus bomb and grenade throwing at the proving grounds, Aberdeen, Maryland. After the tests were made, army officers were amazed to find large numbers of dead ducks in the neighboring waters of Chesapeake Bay.

An investigation showed that the ducks had eaten fragments of unconsumed phosphorus which had fallen in the water of their feeding grounds.

Now when tests are to be made, the soldiers are using devices to frighten the birds away and the bombs are being exploded either over land or over deep water where ducks do not feed.

## CONFERENCE IN HEALTH EDUCATION

At the invitation of the Massachusetts Institute of Technology, a working conference in health education is to be held June 23-28 at Cambridge, Mass. The conference, which is called by the health education division of the American Child Health Association, will be limited in attendance to 100. Registration must be made in advance with Miss Emma Dolfinger, 370 Seventh Avenue, New York.

Pacific and Atlantic

## LAKE MICHIGAN IS THEIR NEW HOME

A quarter of a million fish were emptied recently into Lake Michigan by the keeper of the Lincoln Park aquarium, Chicago, and his assistants. They are now exploring their spacious quarters and are getting acquainted with their new neighbors.

## TRAVERS ISLAND SHOOT

For quick coordination of eye and muscles, no sport makes greater demand than trap shooting. Shooting the clay pigeons is of untiring interest to many sportsmen, and the five in competition here are far-famed for their high scores.

Pacific and Atlantic

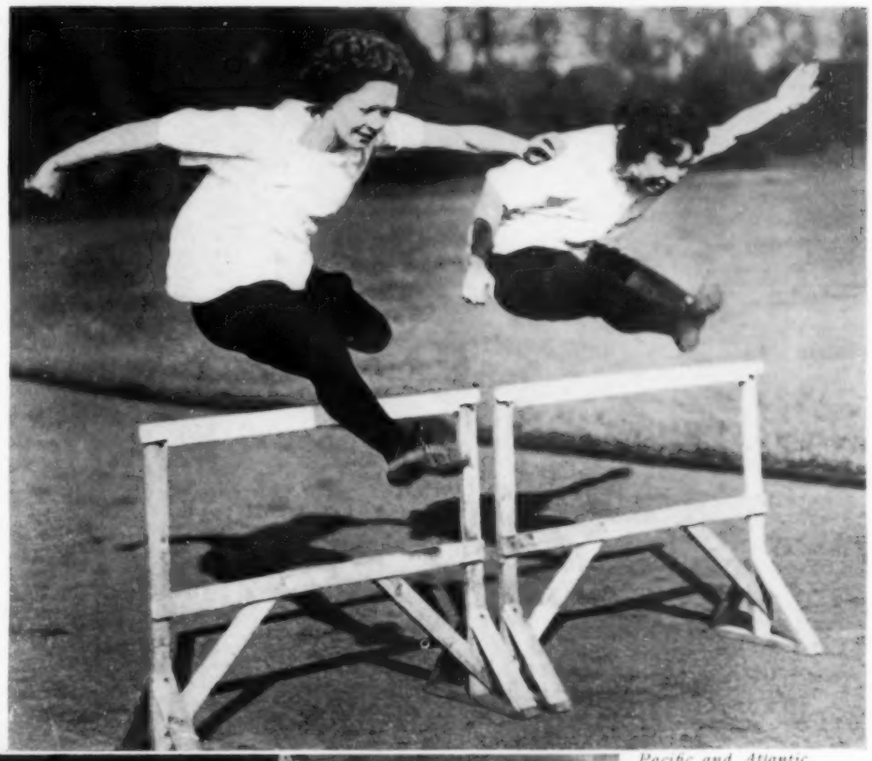
Pacific and Atlantic

## JAP TRIUMPHS OVER INDIAN

In a recent archery contest, Muto, a Japanese, beat Chief Standing Bear with the Indians' own weapon, the bow and arrow. The exhibition took place at the Los Angeles Japanese Archers' Club, and the final score was 52 to 32. Chief Standing Bear is second from the target, at the right; his Japanese opponents are on the other side.

### *HURDLING LOOKS EASY*

The fine form of these British girl athletes makes hurdling look easy. The scene is at Battersea Park, London, where the girls are training for the British Women's Olympic Team.



*Pacific and Atlantic*

### *PUSSY ADOPTS A SON*

Tabby, a handsome Maltese of Jersey City, grieved sorely when her kittens died, but she now has found comfort for her loneliness in an adopted son—an Airedale pup. They are seen here sharing a meal.

*Pacific and Atlantic*

### *TRAIN FOR OLYMPIC GAMES*

More aspirants for honor at the Women's Olympic Games this summer! These English girls are doing practice stunts in preparation for places on the British team. S. H. Turner, a veteran in sports, is their coach.

*Pacific and Atlantic*

### *LOLLIPOPS FOR SALE*

Lollipops and other sweets on sticks are sold this way in Peru. Sanitary regulations in some of our North American cities would prevent the type of portable candy store that flourishes in Arequipa, but in other of our cities we exercise little more control over the candy venders in our streets.

### *HOCKEY AT ITS ROUGHEST*

Lengua Indians in their camp near the wilderness of Paraguay have learned the game of hockey from their white brothers. They play a smashing game, and their heavy sticks, wielded with great vigor, must be rough on shanks.

*Photos by Ewing Galloway*

## CAMPERS, CARRY A SPADE!

Anticipating the summer rush of auto tourists and week-end picnickers, the first radio health talk ever broadcasted by the California state board of health was entitled "Campers, Carry a Spade!" Other health talks are to follow at frequent intervals.

Water and waste should be two of the most important considerations of the camper—the obtaining of good drinking water and the disposal of camp waste, said the speaker.

The best plan for the camper is to carry a jug and fill it each morning with water from a source known to be pure. If this plan is not followed, it is better to boil all drinking water, even though the taste is flat and unpleasant.

A spade is an absolutely necessary utensil on a camping trip, it was declared. It is useful not only in digging trenches and leveling the ground over which a tent is to be pitched, but also in maintaining camp sanitation.

Carry a spade and use it for burying all remnants of food, empty tin cans, papers, old bottles, body wastes, and other undesirable material of every description, the campers were told.

"Don't let camp garbage accumulate to draw flies. Bury it quickly. Pollution of any stream, lake or other body of water is a violation of the laws of California and many other states. For this reason, it is important that all camp waste be buried, say, 25 feet from any stream or body of water, and it should be buried deep enough that it cannot be reached by animals or insects.

"A spade is also useful for putting out a campfire. The coals of a campfire, buried under six inches of dirt, have little chance to flare up and set fire to the forests.

"If you drink pure water and bury all your wastes, your camping trip will be a pleasure to you and to other campers. Leave your camping place as you would like to find it; carry your spade and use it—these are the most important things to be remembered by the camper. Observance of these simple rules will add greatly to the health, happiness and comfort of all campers and hikers."

## $10,000 AVERAGE COST OF COUNTY HEALTH PROGRAM

It costs $10,000 to carry on public health work in the average county, according to a recent report of President George E. Vincent of the Rockefeller Foundation.

The average county health program, says Mr. Vincent, includes: inoculation against typhoid, smallpox and diphtheria; building of sanitary, flyproof latrines; medical inspection of school children, with dental and tonsil clinics; maternity care and infant welfare; control of communicable diseases generally, including special attention to tuberculosis; and education of the community in public and personal hygiene. The typical full-time staff comprises a health officer, a sanitary inspector, one or more visiting nurses, and an office clerk. Motor transportation is provided.

"In all lands," declares the report, "doctors are an essential part of the public health movement. They report births, causes of death, and cases of communicable disease. On them depends the introduction of new resources of diagnosis and treatment; for good or ill they educate their patients; they influence public opinion for or against preventive policies. No health service can prosper permanently unless it can command the loyal support of competent local practicing physicians. The presence of physicians, poorly trained or with no interest in preventive medicine, or of representatives of various occult, empirical, or fraudulent cults is a serious handicap to sane and effective sanitation and hygiene in town or country."

## FOOD SUBSTITUTES FOR DRUGS

When the Eastern Ohio Teacher's Association assembled for its recent annual meeting, it found an interesting home economics display.

Posters dealing with light, medium and heavy breakfasts, balanced meals, care of the baby, health, model meals for children, house planning and furnishing, and vocational home economics were on exhibit.

In the cooking room was a large quantity of canned fruit, vegetables, jellies, jams and pickles and the recipes for preparing and canning them. In the center of the room was a small table on which a dainty and appetizing breakfast for two was arranged. The menu consisted of grapefruit, raisin bread and cocoa.

The most unique part of the exhibit was the display labeled "Food Substitutes for Drugs." A number of well known drugs were placed on a table and opposite each drug was the particular food which could be used in its stead, as follows:

| *Drugs* | *Food* |
|---|---|
| Syrup of figs | Figs |
| Phenolax tablets | Bran muffins |
| Epsom salt | Rhubarb |
| Cascarets | Prunes |
| Wyeth tablets | Orange juice |
| Nuxated iron | Spinach |
| Nature Remedy tablets | Two quarts of water per day |
| Castoria | An apple |

—*Vocational Education Magazine*

## WOODPECKERS CHECK APPLE TREE BORERS

Woodpeckers make a lot of fuss. But while they are knocking on wood they are searching for meat. They play an important part in destroying the round-headed apple tree borer, according to T. L. Guyton, bureau of plant industry, Pennsylvania department of agriculture.

Soon after the borers hatch, the woodpeckers find them beneath the bark of apple trees. The birds start right after the worms, continuing to drill for them as long as the borers are in the wood. In several orchards where counts were made, 50 to 75 per cent. of the borers had been destroyed by the woodpeckers.

The downy woodpecker and the hairy woodpecker are said to be the chief varieties of their species that feed on round headed apple tree borers.

## LOTTERIES AID HEALTH PROJECTS

Every country according to its own traditions! Comes now Spain, through its Army Directory, to authorize a special lottery which will bring in 12,000,000 pesetas ($1,560,000), the proceeds of which will be divided equally among the Red Cross Society, the National Tuberculosis Association, and two societies yet to be organized for the control of leprosy and malaria. Drawings will be made on Race Day, October 12.

In a number of Spanish provinces recently lotteries have been held to bear the expense of infant welfare laws. Great sums have been provided for child health by this means. No other scheme of money-raising gets such universal support in the country.

## FISH PAINTED WITH COAL TAR

It required less than thirty days for the bureau of foods and chemistry to drive coal-tar-painted fish out of Pennsylvania. Four prosecutions were instituted—then all orders for artificially colored fish were canceled and the sales stopped by dealers.

# QUESTIONS AND ANSWERS

*If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. If the question is of general interest, the answer will be published; otherwise it will be sent by mail. Questions are submitted to recognized authorities in the several branches of medicine and answers framed by them. The names of correspondents will not be published. Diagnoses in individual cases will not be attempted nor treatment prescribed.*

### Poisoning by Benzene and Naphtha

*To the Editor:*—I will be greatly pleased to learn whether the fumes from benzol and naphtha are injurious to the human body, and if so what effect they have on one who is working with those materials. Mrs. E. K., Illinois.

*Answer.*—There have been a number of reports made on benzin (naphtha) or gasoline poisoning. The effects of acute poisoning from inhalation of fumes resemble somewhat mild alcoholic intoxication; first a period of excitement leading to depression, headache and cloudy mentality. Many speak of dizziness, headache, spots before eyes, dryness and choking in the throat, and sometimes pains in the abdomen. As a rule the poisoning is not as serious as in the case of other industrial solvents.

Benzene (benzol) is decidedly more poisonous than benzin (naphtha). The symptoms are generally a picture of intoxication with slow actions on nervous system; twitching, exhaustion, muscular tremors and the like. Benzol when inhaled in relatively large amounts also affects the blood.

In both cases the prevention of the poison lies in good ventilation.

### Large Pores

*To the Editor:*—I will appreciate any advice you can give me in regard to curing large facial pores which have been caused by piercing blackheads. If there is any cure for this condition, or any lotion that can be applied to reduce them? D. V. B., Ohio.

*Answer.*—There is no way that a patient can, for himself, reduce the size of large pores. They are due to fat glands in the skin, and these can be diminished in size, and the pores with them, by the very careful use of x-rays. But this is a dangerous procedure except in the hands of a skilful worker with x-ray who knows exactly what he is doing, and under any other conditions should never be undertaken.

Sometimes the pores look large because there is a greasy condition of the skin due to disturbances called seborrhea or seborrheic dermatitis. This can be helped by a physician.

The best a patient can do for himself for such a trouble is to wash the skin twice a day with soap and water—not too vigorously but reasonably—and to use plenty of powder. That does no harm and tends to interfere with the oiliness of the skin.

### Moles and "Liver Spots"

*To the Editor:*—I have numerous moles and brown spots, commonly known as "liver spots" on my face, shoulders and arms. I am 21 years of age, and do not have the sallow complexion that usually accompanies liver trouble. I have tried several bleaches, and they have no apparent effect. I try to keep on a well balanced diet and to drink plenty of water. I have even tried the yeast remedy for skin troubles. W. M., Kansas.

*Answer.*—Moles can be taken off or destroyed by various methods. This should be done only by a physician. There is no danger in treating most moles, but a certain type of black or bluish black mole should be handled with great circumspection. Brown spots on the skin may be little birth marks which are sometimes seen in connection with moles. If that is what they are, the patient has had them since early childhood, for such spots do not come and go.

The so-called liver spots are disturbances in the production of pigment which come on at any time of life but most frequently after 35. They are, so far as we know, due solely to changes in the pigment-forming mechanism in the skin. They certainly have nothing to do with the liver, so that diet or remedies would have no effect. As they ordinarily occur they probably have nothing to do with any internal organ. There is no satisfactory way of removing any of these flat pigmented spots on the skin.

Flat moles, however, may be removed with practical success by physicians skilled in that sort of work.

### Children of Tuberculous Parents

*To the Editor:*—Mr. E. has tuberculosis and has been in bed for three months. We are in the mountains. He stays out on a sleeping porch. His father and sister died of tuberculosis. We have two children, the oldest 3 years and 4 months, a boy; the other is a girl 9 months old.

We take the sanitary precautions you state in your pamphlet—What You Should Know about Tuberculosis—but I wish to know if there is any real danger in the children being up here with him, and just what the dangers are, if any. Would it be best for them to go away? The boy is not very strong, has a low resistance and is 2 pounds underweight. He is very nervous and his stomach is easily upset. The girl is stronger and her weight is normal. Neither of the children has had any children's diseases.

Is there any danger of them getting tuberculosis at their age? They are allowed to play around Mr. E. Mrs. R. E., California.

*Answer.*—Children in close contact with the tuberculous adult, even when living under strictly sanitary rules, do not usually escape infection. Although a single infection may not be followed later by active tuberculosis, oft-repeated exposure to infection is fraught with the greatest possible danger, and children are known to have become diseased from a single exposure.

Pulmonary tuberculosis is not common in early infancy; at that age infection is usually followed by meningeal, gland, abdominal, or bone and joint tuberculosis, usually tuberculosis of the small joints. The infant who has survived this early infection may by virtue of its acquired resistance go on to puberty without the lungs becoming involved.

It is at the age of puberty that the greatest danger of pulmonary tuberculosis exists. At this time the pulmonary form is usually very early fatal. It is the physician's duty to caution the tuberculous parent that the child of a tuberculous father or mother should be reared in an atmosphere entirely free from tuberculosis, at least until the child has reached the age of seven or eight. In the case of the children about whom the question was raised, the father suffering from the disease in an active stage and the grandfather and aunt having died from tuberculosis, *the children should live entirely apart from the father.*

### Rubber Corsets

*To the Editor:*—Would you be good enough to inform me if the rubber garments sold for reducing purposes are injurious in any way. Corsets and brassieres for instance are being put on the market and seem to be creating a big demand among the trade. They are supposed to be made of pure gum rubber and worn next to the skin. I am a corsetiere and interested in the surgical elastic industry, but know nothing of the pure rubber and its action on the skin. Any information you may give me will be very much appreciated. The few physicians I have talked with are frank to say they do not know and referred me to you.

O. T., New York.

*Answer.*—The chief effect of wearing rubber garments next to the skin is that they retain the perspiration on the surface. If this is overdone, it often produces irritation of the skin. The contact with rubber itself might produce irritation but this is a very uncommon effect. Used with ordinary precaution, rubber next to the skin is not likely to do any harm. It, however, does no good. It does not increase sweat; it simply causes its retention on the surface. It does not cleanse the skin. It has no effect whatever in reducing weight.

The chief functions of the sweat are, first, to provide for the regulation of temperature by evaporation; second, to keep the skin soft by keeping it moist and lubricated. The first purpose is defeated by rubber garments, the sole action of which is to prevent evaporation. This does no great harm unless used to the extent of preventing evaporation over most of the body. The second function is overdone by putting on a rubber garment. There is sufficient moistening of the skin by ordinary sweating without providing artificially for its retention on the surface. All this excessive sweat is macerating to the skin, and in that way makes it less resistant and more likely to be externally damaged.

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### Rough Skin
### Shiny Nose
### Corns and Bunions

*To the Editor:*—1. What causes the skin on one's face to chap or peel off after a hot bath. What causes the skin on the nose to shine and what can be done to prevent this? 2. What can be done to remove a corn or bunion and to prevent its return?

E. B., Mississippi.

*Answer.*—1. The peeling of the skin of the face after a bath in hot water might be due either to irritation of the skin by the soap and water, or it might be due to an inflammation of the skin involving some of its glands, a condition which is practically the same as dandruff on the scalp. In view of the fact that the nose is also shiny it is probable that the latter condition is responsible for the trouble. As a rule the application of a non-irritating grease, such as cold cream, will tend to allay the irritation. The oily condition of the nose would require the attention of a doctor for its proper treatment.

2. Corns or bunions will sometimes disappear if proper attention is given to the selection of shoes. They can be removed surgically but will tend to return unless proper shoes are selected.

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### Protruding Chin

*To the Editor:*—Can you tell me if there is any remedy for a person, 28 years old, whose lower teeth come slightly outside the upper ones.

V. G. M., Massachusetts.

*Answer.*—The patient has what is known as a third class malocclusion. Such a condition should receive treatment by a specialist in the correction of dental irregularities, during the childhood period or early adolescence, before the jaw bones have been completely formed and calcified. At the age of twenty-eight, there is little to be done to correct the condition other than a radical surgical operation, which is rarely undertaken and then with little assurance of success.

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### Lupus Erythematosus

*To the Editor:*—What is the cause of lupus erythematosus? To what family of diseases does it belong? Is there any known cure? I am in receipt of a newspaper clipping with a Paris date line which reads as follows: "Two sufferers from the frightful malady of lupus have been cured by bee stings, according to a communication to the Academy of Medicine by Prof. Boinet of Marseilles. Prof. Boinet says that both patients were in a late stage of the disease. He cured the first patient with 1,500 stings and the second was cured after 4,000 stings. The treatment was given under direction of an apiarist." Can you give me any information regarding this?

Mrs. A. G. S., Michigan.

*Answer.*—Lupus erythematosus, a chronic disease of the skin marked by disklike patches with raised reddish edges and depressed centers, has different causes. The disseminated variety is, in many cases, caused by tuberculosis. The one known as the "discoid" type is due to different intoxications and infections. Occasionally the infectious agent is located in the tonsils; in some cases, it cannot be located. In different stages treatment varies. Removal of the primary focus of infection, if it can be found, is valuable. In late stages, radium and carbon dioxid snow are of service. No single remedial agent can be used in all cases.

We have no information concerning the treatment of lupus of any variety by bee stings. The formic acid of the bee sting has at different times been recommended for various other conditions—and found valueless.

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### Hand Missing at Birth

*To the Editor:*—I have a son, now 4 years old, who was born with only one hand and with his heart on the right side of his body. He is in perfect health and is a beautiful and very obedient child. There is a depression on his left side and his ribs curve outward leaving quite a ridge at the ends. I am now about four months pregnant and my doctor assures me that there is only one chance in one hundred that this one will not be a perfect child. I can't keep this worry from me as I do not want to bring any more children into the world unless they are normal. We have a girl of 6 years who is normal in every respect. Do such things as this happen more than once in the same family, and can you give me any idea of the cause? It is his left hand which is missing and the bones to the wrist are there as an x-ray picture showed. It was perfectly healed at birth and the doctors say it looks like a perfect amputation. No one in either my husband's family or mine has ever had such an operation and we know of no one who has. Mrs. Z. A. P., Texas.

*Answer.*—There is no reason for worry about the present unborn infant. Its chance of being abnormal is no greater than that of any other of the unborn babies now being carried by the pregnant women of the world. The chances are millions to one that the other babies of this mother will be normal.

The absence of the hand of this 4 year old boy is probably due to amputation, in the womb, by bands of scar tissue resulting from an infection or other disturbance of what is called the amnion. The amnion is the innermost sac which encloses the unborn infant from a very early period of its existence, and which

contains the "waters" which break at birth, usually with a gush of fluid. An inflammation of this sac or other disturbance may cause it to be thicker than usual and not big enough to contain the embryo without pressing on it or on some parts of it. Thus the embryo is sometimes pressed out of shape or some band of scar tissue may actually gradually cut off a limb or portion of limb and cause other deformities. The amputated portion is not found at birth because it has long since been absorbed. Such cases are not seen more frequently because the trouble with the amniotic sac is usually so extensive that the embryo dies at a very early age and aborts.

The depression in the boy's left side and the fact that his heart is on the right side of his body may indicate that he is a surviving twin. Single egg twins, which grow close together on the same egg, are sometimes crowded so that one of them has some deformity. Sometimes the other dies early and is not seen at birth.

The deformity was not due to "maternal impressions" about which many fanciful tales are told in ancient and modern times. No scientific physician today believes that maternal impressions can or ever did cause a single monstrosity or deformity.

### Dental Bridges

*To the Editor:*—Please advise me which is preferable: a removable dental bridge or a stationary one. The bridge is to extend from the lower right bicuspid to the second molar. The second molar has a large amalgam filling. The first molar, the third molar, and the second bicuspid are missing. All of the teeth are soft and brittle.

E. S. J., California.

*Answer.*—There are so many questions to be considered that it is not practical to state whether a removable or a stationary dental bridge is preferable. The condition of the mouth as to susceptibility and immunity to dental caries, the age of the patient, the habits of the patient in mouth hygiene and the condition of the tissues supporting the abutment teeth, must all be taken into consideration.

There is much difference of opinion in the dental profession as to the advantages of the two types of bridges, some men putting in nearly 100 per cent. of removable bridges, others as high a percentage of fixed bridges.

In this particular case, which is evidently a mouth of considerable susceptibility to caries, the question might be raised as to whether any replacement should be made. The best advice would seem to be that the patient should consult a dentist in whom he has confidence, and let him decide.

### Tetany

*To the Editor:*—Can I get any information concerning a disease called tetany? I have a son 26 years old who has had this disease since his thirteenth year. He has had medical advice from a number of doctors. Two years ago we found one doctor who called the disease tetany and gave him treatment. He is improving. This doctor has since left the state. I would like any information on the subject.

Mrs. D. M. V., Michigan.

*Answer.*—Tetany is a condition in which there is an increased excitability of the nerve-muscle apparatus, manifesting itself chiefly by spasms.

Tetany may be found at all ages. It is often manifest in children and is frequently associated with rickets. It also is found accompanying other conditions, such as acute infections, pregnancy and disturbances of the stomach and bowel. Other cases exist in which it is difficult to find the cause.

Much evidence that exists suggests that the parathyroid glands are at fault. These glands are small bodies situated in the neck close to the glands whose enlargement produces goiter. Removal of these glands causes typical and severe tetany. It has been shown that this form of tetany can usually be controlled by the diet and the administration of calcium or lime salts.

From our present knowledge it seems safe to conclude that in most cases of tetany we are dealing with a disturbance of either the mineral or nitrogen metabolism, probably both. (By metabolism is meant the chemical changes which are constantly going on inside the body.) Along with this we must consider that disease of the parathyroid glands may be the cause. Treatment of this condition would seem to be chiefly a matter of diet, the administration of calcium (lime salts), and possibly an attempt to correct any parathyroid deficiency.

### To Enter School of Nursing

*To the Editor:*—Is it necessary for a person that wishes to enter a nurses' school to have a high school education? If so, why? Surely not all the subjects of high school would be of use to a trained nurse. What books would you advise for a person who is not yet ready to enter a nurses' school, but wishes to study while waiting?

J. W., South Dakota.

*Answer.*—To make a good nurse one must have an alert and understanding mind, good judgment, and sufficient knowledge of the sound fundamentals on which a professional education can be built.

The better schools of nursing require graduation from high school or the equivalent as a minimum entrance requirement. More and more college women are entering nursing schools in recent years, and even the brightest feel that they need all the resources that a college education gives to enable them to meet the higher demands of the profession.

Some physicians and others are of opinion that a young woman with only one or two years of high school work can be given a training which will qualify her to do a subordinate type of nursing as a nurse's aid or assistant, or as a "practical" nurse. A contrary opinion, held by many, is expressed in the report of the Committee for the Study of Nursing Education, formulated after a thorough study.

To quote from this report: "In many states the only educational requirement for schools of nursing is completion of one year of high school. This means that the student is too ignorant to grasp the essentials of training. Schooling which has ceased at 14 or 15 years is no preparation for a professional training and, as shown in our studies of nurses in the field, fatally handicaps their future usefulness and success. Completion of four years of high school should be the minimum entrance requirement."

Subjects that will prove of especial value to the prospective nurse are biology, hygiene, chemistry, household science (including cookery, nutrition and housekeeping), sociology and economics. Arithmetic is necessary. Textbooks used in the high schools on the above subjects would be valuable for study.

### Psoriasis

*To the Editor:*—Kindly inform me of any encouraging discoveries for abating psoriasis?

W. C. B., Connecticut.

*Answer.*—At the present time there is no known cure for psoriasis (a skin disease). Each year there are additions to the store of knowledge concerning this disorder and a competent physician, with a knowledge of diseases of the skin, can usually keep the patient free of the lesions by constant attention. Every patient with psoriasis should keep himself under constant observation in order that the various manifestations may be treated as they develop.

### Falling Eyelashes

*To the Editor:*—What is a safe thing to use on eyelashes in order to make them grow and keep them in good condition? C. L., Massachusetts.

*Answer.*—Eyelashes, like hairs of the scalp, fall because of disease of the hair follicles. Possibly the safest thing to use in such cases is an ointment of a salt of mercury, which can be prescribed by a physician. Probably nothing will encourage the growth of lashes in healthy lids.

### Blood Purifiers

*To the Editor:*—Will you kindly advise me whether or not yeast has any value as a blood purifier, and if it would benefit the complexion. I have read various advertisements to this effect and would like your answer. My complexion is not at all clear but my physical condition is O. K.

E. G., Wisconsin.

*Answer.*—The term "blood purifier" is a very indefinite one. There really is no such thing. Anything which improves the general condition of the health, at the same time improves the blood condition.

Yeast has been thought to be of value because of two things. It has been supposed that the nuclein which is abundant in yeast stimulates, to some extent, the formation of white blood corpuscles, which antagonize the bacteria present in infections. Evidence is not very conclusive. Yeast is not used as much for this purpose as was formerly the case.

Yeast also contains certain vitamins, but the same vitamins are contained in green vegetables and fresh fruits. The liberal use of these is a far better way of getting the same effects than is the use of yeast. Claims made by the manufacturers of yeast are not at all justified by the facts. Yeast, in small amounts, is a not unwholesome article of diet, for those who like it, but many of the claims made for its medicinal action are unwarranted.

### Straightening Teeth
### Tooth Paste

*To the Editor:*—1. Will straightening the teeth make them decay or drop out sooner, if the individual is eighteen years of age when he has them straightened? 2. Does the straightening of the teeth of a child 12 or 13 years of age produce any ill effects on the teeth or gums in later life? 3. What dentifrice do you recommend for the teeth? 4. Can the teeth be cracked by a hard blow in a boxing match in which 8 ounce gloves are used? F. K., Nebraska.

*Answer.*—1. Straightening the teeth of persons eighteen years of age or older may be practicable, providing the movement is carried out very slowly. If the teeth are moved too rapidly, there is danger of causing an undue amount of absorption of the bone so that the teeth will not again become tight. As a general rule, however, it is much better to do the straightening at the earliest possible time, usually between the sixth and the twelfth year.

2. If a child is very susceptible to tooth decay, there are two dangers in connection with the treatment of irregularities. The appliances present unusual difficulties in cleaning; also there is always the possibility that some of the cement may be washed out from under a band, which will invite decay. Most orthodontists watch the bands very carefully, thus reducing the latter danger to a minimum, and if they have the proper cooperation of the child in brushing the teeth, decay should be controlled.

3. No particular dentifrice is recommended. Undoubtedly the proper use of the toothbrush is by far the most important in cleansing the teeth. There is little difference in the value of various tooth powders and pastes. One should select that which makes the mouth feel most comfortable after using.

4. The teeth might be cracked by a hard blow in boxing, either directly against the teeth themselves, but more likely by a blow on the jaw which would bring the lower teeth against the uppers.

### Hardening of the Arteries

*To the Editor:*—Would you please give me some information concerning hardening of the arteries? Is it always serious? My brother is in this condition, and I would be glad to know the facts concerning it, especially the cause.

Mrs. C. H. B., Kentucky.

*Answer.*—So-called hardening or thickening of the arteries is a condition which is met with frequently, especially in elderly people, or those having high blood pressure. In the majority of cases it does not give rise to any symptoms. It may, however, be responsible for a great variety of symptoms.

There are many causes of hardening of the arteries; age alone is the most common cause. Second in importance as a cause is high blood pressure.

### Pneumothorax

*To the Editor:*—Please tell me how long one usually has to take pneumothorax, if the lung has a good compression. W. L. R., Arizona.

*Answer.*—The average length of time that lung compression is employed in pulmonary tuberculosis is from twelve to eighteen months. Cases have been reported in which the lung has been kept compressed for a period of over seven years.

### Protein Diet
### Regular Bowel Movements

*To the Editor:*—1. Where overweight, high blood pressure, hardened arteries, albumin and hyaline casts in urine, paralysis exists, or has existed, is it best to abstain from all meats—red and white—fowl, fish and eggs, and depend chiefly on milk for the protein? Doctors I have consulted differ much; you probably know what the leaders think. 2. If the milk, vegetable, and whole-grain diet gives most promise, how high or how low should the protein be in such a case? Some stand for about 20 grams and others for about 120 grams. I have tried to keep 60 grams as the maximum. 3. Is anything likely to prove more satisfacory than mineral oil and bran, with an occasional enema, in keeping the bowels regular? My experience has been that increasing the dose of oil does not do away with the necessity for an occasional enema. J. L., North Carolina.

*Answer.*—1. The reason the doctors consulted differ much on the question of protein in relation to high blood pressure and disease of the arteries is clear cut. For many years tradition has played a larger rôle in dietetics than have scientifically proved facts. The most recent work casts considerable doubt on the danger of protein in the condition mentioned, provided there is no overindulgence. It is much more important to take a well balanced, normal diet in moderate proportions, than to substitute cereal, fruits and fats and other weight increasing foods for a piece of well-done meat once a day.

2. The patient is wise in keeping his protein intake around 60 grams, although he could easily run as high as 75 or 80 without any great danger.

3. There is probably nothing more satisfactory than mineral oil and bran with an occasional enema for keeping the bowels regular, unless it be a perfectly planned diet and the development of regular bowel habits.

# HEALTH REVIEWS

## ENGLISH VS. AMERICAN ATHLETES

When Oxford and Cambridge compete against Harvard and Yale, they are usually beaten and often by a wide margin, says Dr. Henry S. Curtis in the April *Nation's Health*. The man at the American college has had highly trained coaches and a period of intensive training. The English athlete has had little coaching and a long period of general training. Dr. Curtis thinks the English system preferable.

"The American athlete makes of athletics his business," the physician declares. "The coach tells him what to eat, when to go to bed at night, and when to get up in the morning. The men at Oxford and Cambridge continue to eat, drink and smoke as before. Naturally the American trained man wins. But how valuable is the result?"

When the American man quits college, he usually drops athletics; the English athlete keeps on until he is seventy. Dr. Grace was champion of the world in cricket at 65. Lord Balfour at 76 is still one of the champion tennis players of England.

"English athletics," says Dr. Curtis, "is meeting the needs of Englishmen. Their system offers wholesome activity for the leisure hours of later life. American athletics has no relationship to the needs of later years. Our games are intrinsically unsuited to such use. Few men of fifty care to play American football, baseball or basketball. Students have not selected games with reference to the needs of later years, but with a view to a spectacle. Games should be adopted for the fun of them, and for their adaptability for use in leisure years."

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## RAISES CANARY BIRDS WHILE GETTING WELL

How one semi-invalid developed a hobby, profitable both to health and pocketbook, is told in the April *Archives of Occupational Therapy* by Dr. R. Tunstall Taylor. Dr. Taylor believes a similar occupation might be diverting, interesting and therapeutically valuable to a certain class of patients.

This patient knew she had a siege of several months' convalescence to face before she would be able to get about her usual occupation and one day when listening to her own canary bird, a beautiful singer, she gained the idea of canary breeding.

Accordingly, she selected a pair of canaries—the female large and about eighteen months old; the male younger and very graceful and slim—and watched them raise their first family of eight. So fascinated was she with her new diversion that she bought more cages and in a few months had raised several hundred canaries. Her original bird was singing master for the rest. Started only as a pastime, this woman's hobby developed quickly into a profitable business. She gave away many canaries as donations to charities and gifts to friends and sold many of the finest of her birds for $25 each.

"When the hobby was all over and nearly all my birds sold except my trainer, which I still have, I did not know where the months had gone," writes the former invalid. "I had been so pleasantly busy and interested while bird raising that I forgot all about myself. I had fully recovered and my fad had been very profitable and agreeable from every standpoint."

## BABIES ARE COMMUNITY, AS WELL AS MOTHERS' PROBLEM

Keeping the streets clean is one of the big means of reducing the death rate of babies in any community, says Dr. S. Josephine Baker in an article on "How a Community May Save Its Babies" in the April *Ladies' Home Journal*. The first and most important step in improving the health of infants has to do with things that affect health as a whole.

The community program of improved health conditions, this physician believes, must include the making and enforcing of laws to provide good housing and to eliminate all overcrowded and congested living conditions, the provision of a supply of pure water and clean milk, the establishment of playgrounds and recreation centers with abundant opportunity for outdoor life, the maintenance of clean streets and proper sewage and refuse disposal.

Intimate details of how each family lives are also of community interest, the article states. Bad social conditions and the lowering of the standard of living, which inevitably occur when the wages earned are not sufficient to meet the minimum health requirements, are problems that have to be met if the babies are to be saved and the people as a whole given a fair chance to live and be well. It would seem that the first step to be taken in a campaign to save babies is to arouse public opinion.

"The responsibility for the number of babies that die annually in any community rests squarely on all the people who live there," Dr. Baker declares. "The whole responsibility for baby care does not rest on the individual mother. She cannot alone insure life and health to her baby. A proper program for lessening the number of baby deaths in any community is obtainable by getting the interest and practical cooperation of the community as a whole and by educating the mother."

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## NO LONGER "CRAM FOR EXAMS"

"Examination week and nobody is cramming! Like every other sorority house or dormitory at the university, we have adopted a constructive health program and are out for 100 per cent. physical efficiency in the house."

Thus writes Miss Delta Gamma from the University of Missouri, where the women students have entered on a voluntary health program which is said to be leading to more efficient university work and is aimed at greater efficiency in professional, business or family life after graduation.

Without the usual burning of midnight oil and energy, without the wet towel and frequent cups of coffee, these girls are learning to weather the "exam" periods. Each organized house maintains quiet hours for rest and relaxation and regular hours for sleep. They have given up, for the most part, their practice of eating between meals, and they are getting the proper amount of exercise. Consequently they are better equipped to keep up with their class work and there is not so much overwork, overstrain and worry at examination time.

Each women's organization at the University of Missouri, says the *Journal of Social Hygiene*, has appointed three upper class women to find out the physical needs of each group and to keep its members in touch with medical advisers, in case of minor indispositions.